
Task Force Meeting

of

JOINT LEGISLATIVE TASK FORCE ON DRINKING WATER INFRASTRUCTURE

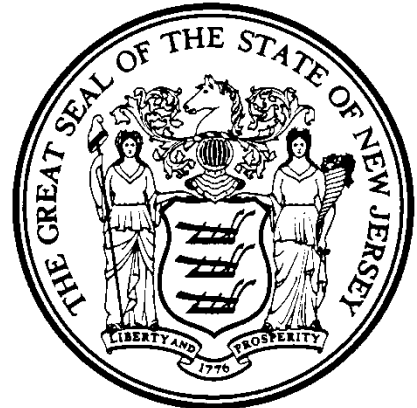
“The Task Force will receive testimony from invited guests and from members of the public on the issue of lead in drinking water”

LOCATION: Committee Room 11
State House Annex
Trenton, New Jersey

DATE: January 26, 2017
10:00 a.m.

MEMBERS OF TASK FORCE PRESENT:

Senator Linda R. Greenstein, Co-Chair
Assemblyman John F. McKeon, Co-Chair
Senator Christopher “Kip” Bateman
Assemblywoman Elizabeth Maher Muoio
Assemblyman John DiMaio



ALSO PRESENT:

Matthew H. Peterson
Office of Legislative Services
Task Force Aide

Alison Accettola
Senate Majority
Kate McDonnell
Assembly Majority
Task Force Aides

Rebecca Panitch
Senate Republican
Thea M. Sheridan
Assembly Republican
Task Force Aides

Hearing Recorded and Transcribed by
The Office of Legislative Services, Public Information Office,
Hearing Unit, State House Annex, PO 068, Trenton, New Jersey



LINDA R. GREENSTEIN
Co-Chair

JOHN F. MCKEON
Co-Chair

SENATE

BOB SMITH
CHRISTOPHER BATEMAN

ASSEMBLY

RAJ MUKHERJI
JOHN DIMAIO

MATTHEW H. PETERSON
Office of Legislative Services
Committee Aide
(609) 847-3855
(609) 292-0561 fax

New Jersey State Legislature
JOINT LEGISLATIVE TASK FORCE
ON DRINKING WATER INFRASTRUCTURE
STATE HOUSE ANNEX
PO BOX 068
TRENTON NJ 08625-0068

TASK FORCE NOTICE

TO: MEMBERS OF THE JOINT LEGISLATIVE TASK FORCE ON DRINKING WATER
INFRASTRUCTURE

FROM: SENATOR LINDA R. GREENSTEIN, CO-CHAIR AND ASSEMBLYMAN JOHN F.
MCKEON, CO-CHAIR

SUBJECT: TASK FORCE MEETING - JANUARY 26, 2017

The public may address comments and questions to Matthew H. Peterson, Committee Aide, or make bill status and scheduling inquiries to Pamela Petrone, Secretary, at (609)847-3855, fax (609)292-0561, or e-mail: OLSAideTDWI@njleg.org. Written and electronic comments, questions and testimony submitted to the task force by the public, as well as recordings and transcripts, if any, of oral testimony, are government records and will be available to the public upon request.

The Joint Legislative Task Force on Drinking Water Infrastructure will meet on Thursday, January 26, 2017 at 10:00 AM in Committee Room 11, 4th Floor, State House Annex, Trenton, New Jersey.

The task force will receive testimony from invited guests and from members of the public on the issue of lead in drinking water.

Issued 1/13/17

For reasonable accommodation of a disability call the telephone number or fax number above, or for persons with hearing loss dial 711 for NJ Relay. The provision of assistive listening devices requires 24 hours' notice. CART or sign language interpretation requires 5 days' notice.

For changes in schedule due to snow or other emergencies, see website <http://www.njleg.state.nj.us> or call 800-792-8630 (toll-free in NJ) or 609-847-3905.

TABLE OF CONTENTS

	<u>Page</u>
Robert Bumpus Assistant Commissioner Division of Field Services New Jersey Department of Education	12
Jim Palmer Executive Director Office of Project Management Division of Field Services New Jersey Department of Education	12
Bruce Ruck, Pharm.D. Managing Director Drug Information and Professional Education New Jersey Poison Information and Education System Department of Emergency Medicine Rutgers Medical School Rutgers, the State University of New Jersey	27
Daniel Kennedy Assistant Commissioner Water Resources Management New Jersey Department of Environmental Protection	37
David E. Zimmer Executive Director New Jersey Environmental Infrastructure Trust	37
Judy Karp, Esq. Legal and Compliance Officer New Jersey Environmental Infrastructure Trust	37
David G. Sciarra, Esq. Executive Director Education Law Center	72
Douglas O'Malley Director Environment New Jersey	86

TABLE OF CONTENTS (continued)

	<u>Page</u>
Michael J. Furrey President and Owner Agra Environmental and Laboratory Services, and Chair American Water Works Association-New Jersey	92
Jeff Tittel Executive Director New Jersey Chapter Sierra Club	101
David Pringle Campaign Director Clean Water Action	109
Harvey Klein Private Citizen	116
APPENDIX:	
PowerPoint Presentation submitted by Robert Bumpus and Jim Palmer	1x
Testimony submitted by Bruce Ruck, Pharm.D.	12x
Diagram, plus attachments submitted by Daniel Kennedy	15x
Financed Environmental Infrastructure Trust Projects submitted by David E. Zimmer	37x
Testimony submitted by David G. Sciarra, Esq.	49x

TABLE OF CONTENTS (continued)

APPENDIX (continued)

	<u>Page</u>
Testimony submitted by Doug O'Malley	51x
Testimony submitted by Michael J. Furrey	59x
Testimony submitted by Jerell Blakeley Campaign Organizer Healthy Schools Now New Jersey Work Environment Council	62x
pnf: 1-127	

ASSEMBLYMAN JOHN F. McKEON (Co-Chair): Welcome to-- Happy New Year to everyone; although it seems like it's been six month, already, since January 1, with a lot going on.

We will start with taking roll; and welcome all.

As you know, we've determined, with a lot of the testimony that's come this far, the issue with lead and lead pipes has come into play. And we thought that as opposed to -- no pun intended -- leeching that component of the whole infrastructure issue into the other aspects, that we were best just having a single hearing, relative to lead.

So with that, we'll ask for a roll call; and then I'll turn it over to the Co-Chair.

MR. PETERSON (Committee Aide): Senator Bateman.

SENATOR BATEMAN: Here.

MR. PETERSON: Assemblywoman Muoio.

ASSEMBLYWOMAN MUOIO: Here.

MR. PETERSON: Chairman McKeon.

ASSEMBLYMAN McKEON: Present.

MR. PETERSON: And Chairwoman Greenstein.

SENATOR LINDA R. GREENSTEIN (Co-Chair): Here.

ASSEMBLYMAN McKEON: Chairwoman.

SENATOR GREENSTEIN: Good morning, everybody, and welcome to this meeting of the Drinking Water Infrastructure Task Force.

Thank you, Co-Chair McKeon; good morning to fellow members of the Committee, and those of you have come to testify about

this very important issue of maintaining a safe and sustainable drinking water supply for our state's 9 million people.

Today we'll focus on unsafe levels of lead in our drinking water; and we'll hear about some inroads being made to battle the problem, which first gained national attention in Flint, Michigan. Later, of course, we found unsafe lead levels in schools in Newark, Trenton, and elsewhere around the state. As we know, exposure to unsafe levels of lead can lead to serious health problems, especially among young children and pregnant women.

At our previous two hearings on the declining condition of our drinking water infrastructure, we've heard from a range of individuals knowledgeable about the subject. We led off with Governor Florio, Honorary Co-Chair -- with Governor Whitman -- of the very important and collaborative effort called *New Jersey Water Works*, an organization of more than 150 key stakeholders put together, under the leadership of New Jersey Future, to help chart a way forward for an aging system that the Federal EPA says has entered a "rehabilitation and replacement era."

The EPA says that work could cost New Jerseyans an estimated \$8 billion, and I've heard much higher numbers than that as well.

We discussed many of the problems we're experiencing as a state, in the handling of our water resources during our hearings on November 30 and December 14, such as how the dire condition of many of our underground piping systems often creates problems reminiscent of developing countries. In fact, at the very moment, during our second hearing -- right here in this room, where we were discussing the fragility of our systems -- on the whole, a hidden crisis waiting to happen along

thousands of miles of underground piping -- a 16-inch water main had broken open in Parsippany, snarling traffic and cutting water use to homes and businesses. And earlier this month, in January -- in the middle of that deep freeze we had at the time -- another 16-inch main broke open, this time just a few blocks from where we sit this morning in the Capital City. That break, five feet under the sidewalk, flooded parts of the downtown, and was bad enough to force the total shutdown of the Hughes Justice Complex, idling the courts and 4,000 State workers who were told to stay home.

The incident made news around the region -- and I have been provided with this copy of the newspaper, front-page news, right there, *Frozen Over* -- including the front pages of the *Trenton Times*; and planted yet another seed in my mind, for one at least, that this condition needs to be remedied.

But today we focus on unsafe levels of lead in our system. And unfortunately, that very serious health issue also continues to make headlines. Just last week, Inglewood Hospital and Medical Center, in Bergen County, announced that it was forced to switch to bottled and tank water after testing by the State DEP found extraordinarily high levels of lead in drinking water samples taken there. The Federal standard is 15 parts per billion, and readings were taken as high as 1,200 parts per billion. The hospital is urging anyone who has been a patient there since September of 2015, and especially children under 6 or anyone who was pregnant, to get tested.

It's unknown exactly where the lead is coming from in Inglewood, though the DEP noted that the source water, from the Suez

Water Company, is free of lead. So that could mean that the lead is leeching from the hospital's pipes and plumbing fixtures.

And that's par for the course when it comes to lead in drinking water. There are pipes that are lead-lined and service lines leading from the streets to the schools, homes, businesses, and other users. There is often lead in the plumbing fixtures themselves, whether through lead piping or solder. Much of this pre-dates the prohibition against lead in certain plumbing systems that came with the Federal Safe Drinking Water Act of 1986.

Because of this, we have hundreds of thousands of units and water users that, of course, predate the Act. Thankfully, there are effective and economical forms of corrosion control and water treatment methods that could mitigate, if not eliminate, the presence of lead in drinking water.

But sometimes these just don't do the trick, and the lead fittings and fixtures in older buildings have to be replaced. This could be the case with many of our schools and, potentially, other places like hospitals. So we can see, we have our work cut for us.

On the bright side -- there is a bright side -- the overarching issue of the critical condition and urgent needs of our drinking water and sewerage infrastructure is beginning to get attention from the public, whose support will be needed to move forward and address our many challenges in this area. Hard work and leadership by the New Jersey Water Works Consortium, our efforts here in the Legislature, and the Administration's decision to provide seed monies to remedy some of these things through the Environmental Infrastructure Trust, are all helpful.

So that in the week between the Trenton water main break and the disturbing news from Inglewood Hospital, the EIT released its Annual Report to the Legislature, with the announcement of a new \$33 million program -- no interest and loan forgiveness proposal -- designed specifically to address lead in drinking water. We have officials from the EIT here with us today -- I think; is that correct? -- to tell us about this new development in greater detail later on.

There have also been a number of legislative bills proposed to address lead in drinking water. The State Board of Ed adopted rules last July requiring schools to sample for lead in each drinking water outlet within a year. School districts also must develop lead sampling plans. The Administration and Legislature have provided \$10 million to schools for testing reimbursement. There are bills that would require healthcare facilities, childcare centers, colleges, and universities to test for lead.

Apart from lead mitigation, there is also legislation -- I'm realizing this is going on very, very long; it's almost done. Would you like to do the rest, on legislation? (laughter)

ASSEMBLYMAN McKEON: I think you're great.

SENATOR GREENSTEIN: Oh, let me finish this; it's only another page.

Apart from lead mitigation, there's also legislation in development that would require improved water audits for waste and inefficiencies. And while that may seem unrelated, there are potentially many millions of dollars in savings and recouped losses that can be gained by auditing, and the improved efficiencies that can result.

A report released just a couple of weeks ago -- and provided to our Committee by our Staff Counsel, Matt Peterson -- on water audits by well-respected water efficiency consultant groups is very revealing. An extrapolation of that report found an estimated 130 million gallons per day of treated water is lost to leakage, breaks, and other waste in New Jersey annually. That's \$12 million of valuable resource down the drain, if you'll forgive the pun. That's real money that ideally could help offset the cost of other long-overdue improvements.

As Governor Florio aptly stated in the first hearing, "Better to put money into the system upfront to invest in repairs, than have to pay extraordinary amounts of money on patchwork and emergency fixes."

I look forward to learning from our experts today; and to taking what is, hopefully, another step towards remedying a drinking water supply system in desperate need of repair or replacement.

Thank you.

ASSEMBLYMAN McKEON: Thank you, Co-Chair.

And I really have nothing to say or do, with somebody so thoughtful and prepared. (laughter)

And it is a pleasure to serve with you, for so many years.

SENATOR GREENSTEIN: Certainly.

ASSEMBLYMAN McKEON: And to continue to do so.

I'd also like to acknowledge -- and, perhaps, after I do, say a few words -- he might have an opening statement as well.

Senator Kip Bateman, who I have the utmost respect and admiration for; as well as Assemblywoman Liz Muoio, the same. You have done an amazing job here, and thank you for all your hard work.

Assemblyman DiMaio is on his way. He had other legislative duties, but will be here within the hour.

And you referenced staff already, Senator, in the form of Matt. But Ken and Alex, Kate, Thea -- all of you are amazing; and there's been so much and, of course--

SENATOR GREENSTEIN: And Alison.

ASSEMBLYMAN McKEON: And Alison; I'm sorry. I'm, like, looking with my head on a swivel.

But you have all been great, as it relates to the information that you've helped us synthesize; and putting this all together to the point of the report that this Committee will ultimately issue to deal with this, really, quality of life and -- I don't want to say the word *huge*, but -- incredibly important issue to the people of the state.

It's interesting with the lead-- I'm going to be a little different than Linda; I just try to look at things from the historic perspective. I had -- I read about the fact that a lot of people attribute the sociopathic behavior of a lot of the Roman emperors -- not to all the wine they drank, but from the flasks that they drank from, which were always lead-lined. So it's actually something -- a toxin that's been known to our society for many, many hundreds of years.

It was in 1800, in the United States, when lead started to be utilized in public pipes. And by 1900, 70 percent of the cities that had 30,000 or more people in -- of population were using lead piping. And why did they do it? Iron was the other choice; and, comparatively so, it lasts, like, a lot longer -- 35 years longer; which, I guess, is a good thing, for that purpose, but a bad thing relative to -- a lot of it is still round.

And then, secondly, obviously it was very much more malleable. And so that became the modality of choice, if you will, to deliver water through our cities and through, now, much of our -- many of our communities.

But there's no question, of course, that lead is a toxin. And interestingly, by about 1860 is the first study I could see and find in my research that denoted that there might be deleterious health effects. And that continued. By 1890, the Massachusetts Department of Health came out, again, with warnings in a study that led -- that the portal of water was having an effect on the health of the individuals who were drinking it, and such.

By the 1940s, it was absolutely -- main stream science was such that we realized what the risks were.

What's amazing to me, though, is why it took to the 1960s until the CDC actually recognized it. But that has gotten us into the issue we have. Because that's just been -- it's not just -- 80 years ago, I guess, to the point where it was finally recognized.

And even beyond that, what levels are acceptable? I guess the sidebar is -- and we have experts who will speak -- but we're all familiar with the deleterious, again, effects that this has, particularly on the neurological development of humans, and the most vulnerable -- that being children. Whether it's pesticides or other chemicals, we know that children, during developmental ages, are most vulnerable

And the other issue with lead is that it stays; it doesn't flush out. It has a shelf-life, if you will, once it plants within the brain, that goes for an inordinate amount of time.

Something else that I found interesting -- and I don't think it diminishes what we're doing today -- everybody like my move, there? (laughter) Nice, right? That's how I got my wife. (laughter) Pretty cool.

What's interesting is, only 20 percent of the lead that we're exposed to comes from water. The EPA has reported that. I find that to be very interesting; I would have thought it would be a lot more, just based on volume. But the sources are more relative to paint and otherwise. And the Administration recently recognized, and made \$10 million immediately available, to start to deal with abatement now; and I commend them for that.

But getting to the deal with the children and the testing -- it's incredible to me, too -- and this isn't today's hearing, but something that we, as legislators, need to think about. There's not mandatory testing for children. Only 26 percent of the children are tested in our state. And the other piece of that is, you know, when you get into the ages of 6 and 8 and in a lot of these schools, and city schools, we see an inordinate number of individuals who are classified as having some level of disability -- learning disabled or otherwise. And I really wonder, as they're not necessarily being tested, how much of it has to do with cognition that comes from lead and the levels in the bloodstream?

I'm going to compliment the Administration for a second time. And again, I'm not an environmental scientist, but the numbers are pretty profound. The EPA talks about 10 micrograms of lead per deciliter of blood as being an acceptable levels. Well, our-- Very recently, our DEP changed it from 10 to 5 -- in half -- as far as what they think the science is -- an acceptable number.

So we're dealing with something now at a level that is a real significant crisis if one is exposed to that; again, particularly as a child.

In any event, we're going to do a lot more listening, as we have at these hearings, than talking. I know that Senator Bateman has a very interesting proposal, as it relates to lead pipe abatement, that's in the pipeline; no pun intended. Again, the Environmental Trust Fund, coming up with that \$33 million -- focused, really, on income-eligible communities -- is a great first step. Unfortunately, that sum is a lot of money, but probably just a pittance of what's needed to really do the remediation that's necessary.

So again, I thank you all for listening to me. We look forward to today's proceedings.

And with the Chairman's permission--

Senator.

SENATOR BATEMAN: Thank you very much.

And let me thank both the Chairs. And I'm excited to be on this Task Force.

First, I want to thank you for changing the date. Wednesdays are terrible for me; I apologize for missing the last two. But Wednesday is one of my busiest days in court.

But I'm happy to be part of this, because this is such a very important issue. And as Legislators, we have a responsibility to do the best we can to solve this lead crisis.

So I look forward to hearing from the speakers today. And I have the transcripts from the previous hearings, so I will catch up.

But thank you, both, for accommodating my schedule.

ASSEMBLYMAN McKEON: Assemblywoman, do you have any thoughts before we begin?

ASSEMBLYWOMAN MUOIO: Yes, just a thank you for including me in today's hearing. As a sponsor of numerous lead bills, it's an issue I've been very interested in.

And I also want to point out -- Chairman McKeon mentioned the lead levels being reduced to 5. That was in reaction to the CDC level, federally, which is 5. CDC is now reexamining that and thinking about lowering it again to, I think, 3.5. So there really is no safe level of lead in the blood, as I'm sure we're going to hear from our experts today. I'm very much looking forward to hearing the testimony, not only to see if we can get our hands around the scope of the problem, from a health perspective; but also structurally, logistically -- what are we facing, here, in terms of what we'll need to do and be prepared to finance, moving forward, in order to eradicate this problem once and for all?

So thank you for including me, and I look forward to the testimony.

SENATOR GREENSTEIN: Thank you.

Our first witness today is Bob Bumpus, who is the Assistant Commissioner of Field Services at the New Jersey Department of Education.

Thank you.

Don't forget to press it so that it shows red. (referring to PA microphone)

ASSEMBLYMAN McKEON: Mr. Bumpus, if you could introduce the gentleman along with you.

R O B E R T B U M P U S: Good morning, Senator Greenstein, and Assemblyman McKeon, and distinguished members of the Joint Task Force on Drinking Water Infrastructure.

We are very pleased to be here this morning; and thank you for your invitation.

I am Bob Bumpus, Assistant Commissioner in the Department of Education in the Division of Field Services. With me this morning is Jim Palmer, our Project Manager in the Division.

Our presentation before the Task Force will focus on the implementation of the new regulations regarding the sampling and testing of lead in the drinking water of over 2,500 educational institutions.

ASSEMBLYMAN McKEON: Welcome, as well, Mr. Palmer.

J I M P A L M E R: Thank you.

MR. BUMPUS: The Governor and the Legislature appropriated \$10 million in its Fiscal Year 2017 budget to address the sampling and testing of water in educational facilities across the state. The attendant regulations were developed in collaboration with the New Jersey Department of Environmental Protection, and amended the Administrative Code entitled *Safe Drinking Water*.

These regulations applied to over 2,500 schools, including approved private schools for students with disabilities, and State-funded Early Childhood Centers; as well as charter schools, and Renaissance Schools; and Commissions that are listed on the PowerPoint. These include, potentially, 800-plus organizations; as I said, literally thousands of schools and educational facilities.

All drinking water outlets and food preparation outlets are included in this program; and any water outlet that potentially delivers consumable water to students and adults must be tested. The Lead Sampling Plan requires a plumbing survey, which addresses the water entry and flow to water outlets. The materials of the plumbing infrastructure of our facilities are also specified in the plan.

The regulations went into effect on July 13, 2016, and extend to July 13, 2017. Districts unable to complete the sampling and testing may apply for an extension of up to one additional year. The application must include detailed reasons why the sampling and testing was unable to be completed in the first year of the program. The current regulations also require that schools undergo this comprehensive testing of water every six years following the initial testing year. To date, approximately 50 percent of your schools have reported completion of testing.

The U.S. Environmental Protection Agency's guidance manual is called *The 3 Ts for Reducing Lead in Drinking Water*, which includes training, testing, and telling. The DOE's initial training and communication, developed with DEP, includes three half-day sessions during the last week of September, with nearly 1,000 people registered and participating. Also contributing to our training program was the AWWA -- the American Water Works Association -- in concert with the DEP. Online training videos are also available, addressing key steps in the testing process. And on our website -- the DOE website, we have the DEP guidance materials as well.

Our guidance for testing includes something called the *Quality Assurance Project Plan*, or QAPP. This provides detailed programming in

project/task organization, special training needs, lead data quality objectives, field monitoring requirements, identification of methods for analyzing water samples, sample handling and chain-of-custody procedures, and reporting processes of testing results.

Communication is always important, and all test results must be available at each school and on the district website.

A single outlet in a school with results above the 15 parts per billion action level triggers the following requirements: Each school must post specific schools that are above that action level, and send written notification to parents and staff of impacted schools describing steps taken to end use of these specific water outlets, and describing steps ensuring alternate drinking water is available.

Districts also are required to submit a Statement of Assurance -- an annual Statement of Assurance, validating each district is managing its drinking water in conformity with all the regulations.

To date, we have received reimbursement requests from 18 eligible districts. And these include -- these reimbursements include two things: reimbursement for sampling the water, and reimbursement for testing and analyzing the results. This testing, actually, varies widely across the state. Some are at \$15 per water sample; others are in the range of \$60 per water sample.

To date, we have received notification that, again, approximately 50 percent of our school districts have completed the testing, but not all of them have asked for reimbursement of the results yet.

We also have other ways of communicating with our districts. We have received 21 notifications from districts with results above the

action level. We have also received three requests for an exemption, indicating that they do not use the water; and these have been from Early Childhood facilities that use bottled water.

We have an ongoing communication plan, and we will update our website as needed.

Beginning on March 1, we will send monthly reminders to all superintendents and business administrators about the impending July 13 deadline.

We'd be very happy to answer any questions the Task Force may have.

ASSEMBLYMAN McKEON: Chair? You're good?

Just -- of the 21 notifications, can you just walk me through what the next step is for them? They have a certain time to remediate; is there money available; is that left to the district? How will that work?

MR. PALMER: So the remediation part of this process is left to the district. The \$10 million that was in the budget last year is limited, literally, to the reimbursement for the cost of collecting water samples and the extremal certified labs to complete the test. There is no money that we have set aside for remediation for school districts across the state.

ASSEMBLYMAN McKEON: Can I stop you there?

Of the \$10 million -- I know the deadline, I guess, is July, as you explained. But does that look like it's adequately funded to complete that task?

MR. PALMER: We do not have adequate information. The decision we've made, in terms of doing the reimbursements are -- we're not sending out any reimbursements to any of the eligible organizations at this

time, because we don't know whether the \$10 million will be adequate to cover all of the testing for these 800-plus organizations.

ASSEMBLYMAN McKEON: So what's the plan, then, if it's not; to pro rata?

MR. PALMER: To pro rata. From an equity perspective, the decision we made is that we don't want to do this on a first-come, first-served basis. We want to give-- If we get \$11 million worth of reimbursement requests, we will do it on a pro rata basis -- you know, reimburse some percentage of it so that all the eligible organizations are able to take advantage of some portion of the funds.

ASSEMBLYMAN McKEON: You came up with the number, I assume, not out of the sky. So are you expecting that's going to be pretty close to adequate?

MR. PALMER: We have no information that could lead us to be able to make a projection right now. We've done some back-of-the-envelope kind of calculations that says the \$10 million should be adequate. But we don't want to come out in any kind of public comment, unless we have some facts and data to support the conclusions that we would be making.

ASSEMBLYMAN McKEON: And by the time we adopt the budget, you will know, though?

MR. PALMER: We are expecting-- As Bob pointed out, half the school districts in the state, and about the third of the charter schools, have completed the testing. We have a very minimal number of notifications. We're going to start a communication program to these folks to say, "Look, we need to get you communicating to us. Where are your

reimbursement requests? Where are your other notifications?" -- so that we can get a good sample of all of the districts. And we're assuming if we get reimbursement requests that are somewhere in the range of 20 to 25 percent of all of the schools -- all of the eligible entities out there -- we'll be able to extrapolate from that and say, "Yes, we'll have adequate funds," or "No, we may not have adequate funds." But we have to get a representative sample because of the range, as Bob pointed out. We have sampling costs coming in from \$15 a sample, upwards to \$60. And there are other organizations that are one or two times -- that have been even higher than that. Such broad variations in the cost-per-sampling -- we just don't have adequate information, right now, to give you any kind of a definitive statement.

ASSEMBLYMAN McKEON: I don't want to take up too much time; but, I mean, are there reputable companies that do this? Is there some kind of State contract that can get put together that you would know what the costs will be; and it will be, hopefully, a volume discount?

MR. PALMER: Good question.

Every one of the labs that are doing this are all certified by the NJDEP. If they're not on DEP's certified list, they're not permitted to do this testing.

Even though certified labs have very broadly ranging costs for the testing, we have, at the Department of Education, been encouraging the Education Service Commissions -- there are five of them in the State, right now, that either are -- do have cooperative purchasing programs in place; four have cooperative purchasing programs in place right now, one of them is still working on the process of getting their bid documentation together.

And we're encouraging school districts to go to those Ed Service Commissions to determine whether or not the most competitive pricing is available through their bid processes.

I have personally-- You know, information I've seen -- invoices coming in from some of these certified labs -- that are actually lower cost testing than what the Ed Services Commissions are getting. But we're encouraging the Ed Services Commissions to do that kind of competitive bidding to manage the price for the sampling as best as possible.

ASSEMBLYMAN McKEON: Okay.

SENATOR GREENSTEIN: I have just two quick questions, I think.

You said about 50 percent of the schools that have been -- that have completed the testing have had positive outcomes for, what, about 50 percent?

In the schools, how widespread was this? Could it be a single water fountain; would it be large swaths of the schools? I mean, how-- If somebody said, "I'm positive; I'm one of the 50 percent positive schools," how widespread was it?

MR. PALMER: So very quickly, let me just correct on that.

The statement wasn't that 50 percent of the schools have come back with positive results. What Assistant Commissioner Bumpus had stated was that 50 percent of the school districts have told us they have completed testing.

SENATOR GREENSTEIN: Oh, okay.

MR. PALMER: Okay, all right. And then we've only gotten 21 formal notifications, as the regulations require. When you get a school that

has even a single water outlet above 15 parts per billion, you're required to notify the parents, the staff of the building, and send us a copy of that notification that you've put out. We've only received 21 of those.

SENATOR GREENSTEIN: What's the required remediation under the standards, right now? What do they have to do if they find above the parts per billion?

MR. BUMPUS: They must provide drinkable water; that's first and foremost. As far as the infrastructure, we haven't -- we don't -- we haven't addressed that.

MR. PALMER: So the way the regulations are written is, if I'm a school and I have even that single water outlet in that communication -- the template of which was developed by the Department of Environmental Protection, and we're just utilizing all their guideline documents -- they are supposed to take that water outlet -- it could be a kitchen sink, could be a drinking water fountain -- out of service; tell the public what the results of that test was, what was the lead level that came back; and then, if they have a definitive solution that they're going to put in place, they can include that in that communication.

The immediate step could be as simple as just take it out of operation, shut the water supply off to it, label it, drag it -- whatever it may be -- so that no one can use that drinking water outlet, okay?

The DEP guidelines -- as well as the U.S. Department of Environmental Protection -- have information available for ways to remediate lead. We, as the Department, are not directing any school district to choose one type of remediation versus another. The costs vary widely; the cost-benefit analysis needs to be done at the district level. We

encourage them to look for all the information about potential remediation types. And Mr. or Mrs. Superintendent, your Business Administrator -- you make the decision, with your School Board, about how best to handle the remediation for a long-term solution.

SENATOR GREENSTEIN: Are you finding any kind of a negative reaction from the public, fear among parents, when they hear -- even if the school is remediating -- when they hear that there's lead in the school? Are you getting some negative reactions?

MR. PALMER: We don't have a communication flow into the operation that I'm managing, that's coming from parents. Our communication flow is coming in from school districts; either superintendents, or business administrators, or facilities directors. So we -- I don't have any insight into what the parents' responses have been.

SENATOR GREENSTEIN: And I just want to add to what my Co-Chair said about the great disparity in testing costs.

If there's any way to get that standardized -- either through a State contract or any other way -- that would seem to be a good direction. Because even if the labs are A-1 labs, and really excellent -- to have that kind of a disparity is going to cause a lot of issues and questions.

MR. PALMER: Yes, I agree with you.

SENATOR BATEMAN: Madam Chair, when you're done.

I would just like to-- Yes, I think once you determine whether that \$10 million is going to be enough, if you could let the Chairs know--

MR. PALMER: Sure.

SENATOR BATEMAN: --because if we need to do a supplemental, it's important that we have enough funds to get a testing.

The \$10 million -- if you find out the \$10 million is not going to be adequate, then we want to do something about it.

MR. BUMPUS: Thank you.

MR. PALMER: We certainly will.

ASSEMBLYMAN McKEON: Assemblywoman.

ASSEMBLYWOMAN MUOIO: Just in your, I think, third slide, you mentioned there were potentially 800 organizations that would be affected by these regulations. And you have 21, so roughly half -- is it roughly half of the 800 that have responded, that have done their testing?

MR. PALMER: Yes, ma'am.

ASSEMBLYWOMAN MUOIO: So, say, 400 organizations.

And you've only received notifications from 21; now, is it 21 organizations; like, 21 of the 400--

MR. PALMER: Of the 800.

ASSEMBLYWOMAN MUOIO: --that have tested so far have indicated a problem?

MR. PALMER: Yes; they told us -- sent in that notification that they had at least one result come back above 15 parts per billion.

ASSEMBLYWOMAN MUOIO: Okay. When you say 400 have done their testing, have they gotten their results, or have they done the testing and they are awaiting results?

MR. PALMER: They are at varying stages. Some of them have completely-- In the information that we got in the survey, some of them were fully completed; other said testing was completed and they were awaiting results. So they are at varying stages of the process.

ASSEMBLYWOMAN MUOIO: Okay. And the July deadline for testing -- is that just you have until July whatever, 12, to do your test? Or do you have until July 12 or 13 to complete your tests, have your results, and have notified the public in your school district?

MR. PALMER: So the text in the regulations -- the way that they're written -- and I don't have them memorized -- is that you have 365 days from July 13, 2016, to complete you testing.

ASSEMBLYWOMAN MUOIO: Okay.

MR. PALMER: Okay. So that could be subject to some discussion as to whether or not, if you just complete getting the lab to do the testing, and maybe it takes two weeks longer to get the results back--

ASSEMBLYWOMAN MUOIO: Okay. You know, what I'm getting at; I'm just trying to figure out if this 21 number is -- takes into account the results of 400 organizations having tested their water; or is this just the first little wave of what we can expect to get some time, by the end of 2017, when everybody gets their testing done and their results in.

MR. PALMER: I would suggest that it's the latter; that it's the very first wave of the information flow. Which is one of the reasons why we put in our presentation here that, beginning March 1, we're going to start banging the drum. We're going to communicate regularly with school districts and approved private schools to say, "Folks, you have a deadline. We need information flow from you so that the Department can begin making decisions." So I would suggest that it's the first wave.

ASSEMBLYWOMAN MUOIO: One last question.

Is the Department looking into putting together-- I know this \$10 million does not, and could not, even hope to begin to cover the

remediation costs. But is the Department starting to look at-- I mean, I know in Camden School District, they have been drinking bottled water for years. That's the best they could do, in terms of remediation, to provide safe drinking water for the children. Has the Department started tackling the idea -- for these districts around the state -- as to the best way, the most cost-effective to begin remediating this problem; assuming this is just a drop in the bucket, no pun intended? But in terms of what we can expect to see for districts that are going to have actionable levels and we need to take some -- do some response?

MR. PALMER: No. We haven't taken any steps in terms of funding for that.

ASSEMBLYWOMAN MUOIO: I mean, just even starting to look at -- provide guidance to school districts, in terms of--

MR. PALMER: So we are providing guidance; and again the Department of Environmental Protection -- on their website, and that is included in DOE's website as part of their guidelines -- has information available about a variety of steps that any organization can take to do remediation. From as simple as -- picture yourself in a school building now; you know, I have one drinking water outlet that is my sole high-lead level. I just replace that drinking water outlet with a brand new outlet that may have an inline filter in it as well. So remediation in some locations, that have a very small number -- even a single outlet -- could be as simple as replace that drinking water outlet.

There are other potentials; there are regulations in place for schools to have a minimum number of drinking water outlets, per the population of the building. There are a variety of schools that are way

beyond those regulations; and their remediation could simply be, “I have these drinking water outlets that are above the level. I’m just going to remove them from the building, because I don’t need them to meet my other facilities requirements.”

So there’s a range of aspects of what people can do to address the issue. And I’m having conversations with business administrators and facilities directors pretty much, you know, every week; and we discuss many of these topics.

But again, we at the Department aren’t taking a position because -- a personal opinion -- I’m sure I will get other people to agree with me, it’s not our role to say, “You should do *this*, or *this*, in your specific building,” because these buildings needs are different. And the school districts are the ones that know the best what they need to do in their buildings. We’re giving them options, and letting them make their cost-benefit decisions, and letting them choose the steps they might want to take.

ASSEMBLYWOMAN MUOIO: Okay; all right.

Thank you.

MR. PALMER: Sure.

ASSEMBLYMAN McKEON: Thank you.

For the record, that’s four really bad puns by the panel, so far.

(laughter)

I don’t know if you’re the best person to pose this to. But my understanding -- and please correct me -- is that schools are more susceptible to issues with lead because they’re closed on weekends; they’re closed over the summer; they’re closed down at, usually, 3, 4 o’clock; and

that they don't naturally flush, so to speak. Is that-- Is there some accuracy to that?

MR. PALMER: So I would suggest that that would be a really good question to ask our colleagues at the Department of Environmental Protection, where they have the better scientific understanding of what can take place inside of a building, inside of the pipes, and residence-time for the water.

ASSEMBLYMAN McKEON: And I will raise that, and I appreciate that might not be your expertise. But I would imagine, in your position with the Department of Education, that would be something known to you anyway.

MR. PALMER: Yes. It's known to us and, you know, it's a pretty good assumption on your part. I mean, the lead leeching into the water is a function of residence-time. If I have water-- If I have a school building that was built in 1968 -- copper pipes with lead solder throughout it -- if that building is used constantly, and the water is flowing through there, and it doesn't spend very much time at all in the building, there's not much time for the lead to leech out. So your point about over the weekends, over the summer when the water flow is dramatically less, the water spends more time in the building--

ASSEMBLYMAN McKEON: Even at night; school's over at 3, 4 o'clock -- whatever it is.

MR. PALMER: Over at 3 or 4 o'clock; you know, it has much more time in contact with the lead, so you'll have a potential for higher lead levels in those kinds of positions.

ASSEMBLYMAN McKEON: So I guess my question -- and I think this would be your role; or if it's not, we'll find out whose it is -- assuming that to be the case, you know, and whatever the science is, just even for someone like me, that's seems logical--

MR. PALMER: Yes.

ASSEMBLYMAN McKEON: Is there a best practice in place? Do you guys have a directive out to say, you know, "Flush the water fountains out" -- I guess that would probably be the only place -- or in the cafeterias, when they're--

MR. BUMPUS: We should take that under advisement. That's a great idea.

MR. PALMER: Yes.

MR. BUMPUS: We do not have a directive, at this point.

MR. PALMER: DEP has, in their guidance documents, you know -- discusses flushing the building. I have made that comment myself in face-to-face discussions with business administrators and facilities people when I've gone into their building and seen specific issues just like that -- about flushing the building; so that you can use that as part of your remediation plan to reduce the residence-time for the water in the building.

MR. BUMPUS: We will take that back.

ASSEMBLYMAN McKEON: Okay. And thank you, Assistant Commissioner Bumpus.

MR. BUMPUS: Yes, we will take that back.

ASSEMBLYMAN McKEON: Yes, that would be a great thing to be able to remind schools.

MR. BUMPUS: Yes; it's a great idea.

ASSEMBLYMAN McKEON: Thank you.

Any other members? (no response) We're good?

SENATOR GREENSTEIN: Thank you.

ASSEMBLYMAN McKEON: Thank you both, very, very much, for your thoughtful testimony--

MR. BUMPUS: Thank you.

MR. PALMER: Thank you.

ASSEMBLYMAN McKEON: --and for your efforts.

You're in charge; who's next?

SENATOR GREENSTEIN: Okay, let's see.

Yes, Dr. Bruce Ruck, Director of the Drug Information Services and Professional Education at the New Jersey Poison Information and Education System, a Division of the Department of Emergency Medicine at Rutgers Medical School.

Thank you, sir.

B R U C E R U C K, Pharm.D.: Good morning, and thank you very much for inviting us here today.

On behalf of Dr. Calello, the Medical Director of the New Jersey Poison Information and Education System; myself, the Managing Director; and Rutgers University, we would like to thank the Task Force for inviting us to provide testimony today.

Dr. Calello, an expert in the field, could not attend today due to a previous engagement at a conference. An expert in the field of lead poisoning and drinking water, she was instrumental in helping me assemble the information that I will be providing you today.

Dr. Calello and I will also both be available after this meeting -- this testimony, if you have any other questions today or in the future. And Dr. Calello is also available by phone today, if necessary.

ASSEMBLYMAN McKEON: Thank you.

DR. RUCK: I have been the Managing Director of the Poison Center for almost 27 years. In this capacity, I have been involved with lead poisoning and, probably, involved with over 1,000 cases of lead poisoning in children.

The Poison Center has served as a hotline, for all this time, for all kinds of poisoning-related issues, especially lead poisoning. As of late, as you heard a few moments ago, we've been involved with the Inglewood Hospital Medical Center issue and the lead poisoning. As soon as that hit the news, myself and the Medical Director reached out to the CEO of the hospital, offering our hotline services to them. As of Friday, we are picking up calls for them as it relates to the lay public; and the lay public that has any questions are invited to call the Poison Center.

We did the same thing with Morristown Hospital back a few months ago, in February. In approximately a two-week time, we took over 200 calls as it related to lead poisoning at that hospital.

We're also picking up calls for the Newark School System -- from the parents of those who go to the Newark School System -- as well as other places when lead reports in the water have been reported.

There is no safe amount of lead exposure to the developing brain. Even low amounts of lead exposure in children -- as measured by the concentration of lead in blood -- cause adverse developmental and intellectual consequences.

In 2012, in response to new scientific evidence repeatedly demonstrating the damages to the brain, the Center for Disease Control has lowered the blood-lead level threshold from 10 micrograms to 5 micrograms; and we anticipate, very shortly, that level is going to be dropping to approximately 3 micrograms per ML, as the new action level.

The Environmental Protection Agency estimates that drinking water at the current action level of 15 parts per billion contributes 2 to 3 micrograms per deciliter to a given person's blood level. Values higher than 15 parts per billion of the action level will actually cause greater elevations in the blood levels of lead, leading to even greater adverse effects in exposed children and other susceptible populations, especially pregnant females.

Research has shown blood-lead levels greater than 10 are associated with a quantifiable IQ loss for every blood-lead level greater than 10. In children -- what is becoming very interesting and we are learning more about -- blood-lead levels of 1 to 10 cause a dropoff in IQ points that are actually greater and steeper than IQ points lost when the blood-lead levels are higher. So it appears most of the damage that we see actually starts when those blood-lead levels are lower than the current CDC action level of 5, and lower than the State's action current level of 10.

This data has led to rethinking of the low-level exposures, and the intention to minimize drinking water exposure as much as possible. For every child whose blood-lead level goes above 10, the State and local health department currently intervenes to determine and mitigate the source of exposure. That threshold, as I mentioned a moment ago, will soon be 5 in the State of New Jersey, and probably, within a few years, 3 from the CDC.

Currently, there are about 700 children a year who receive services because the blood-lead level is greater than 10. When the blood-lead levels drop to 5, the action level -- that number is expected to rise to over 4,800 children.

ASSEMBLYMAN McKEON: Can I just stop you?

Where do you get that from? That's an enormous change.

DR. RUCK: The 700 to the 4,800?

ASSEMBLYMAN McKEON: Yes.

DR. RUCK: When we went back and looked at the number of children in the state that have levels between the 5 to 10 range, those numbers go up dramatically. So right now, 5 is not an action level within the State. But if you look at the database--

ASSEMBLYMAN McKEON: I'm so--

DR. RUCK: That's okay.

ASSEMBLYMAN McKEON: Because I was going to ask that in--

Go ahead, please, Liz, if you had a --

ASSEMBLYWOMAN MUOIO: I was just saying-- They all get tested by their pediatricians. But it only, right now -- at the 10 level, it only sets off alarms. Now we have the results for everybody who is between the two, so we can-- That's how they know that there's a large number who falls--

DR. RUCK: That is correct. So the number--

ASSEMBLYMAN McKEON: Well, then, let me just test that about, because maybe I was wrong before.

My understanding was only 26 percent of kids do get tested. So that's what I was, kind of, trying to connect. I appreciate -- when the number changed from 10 to 5--

DR. RUCK: Right.

ASSEMBLYMAN McKEON: --there would be more. I was just wondering how you got that proportion -- what the base data was.

DR. RUCK: And from my understanding-- I did not put that specific number together; and I can double-check that. From my understanding, that's based upon the current numbers of -- based upon the current numbers that we are seeing, and the values that we see in the database that are not yet at action levels. So those are the number of people who have been tested; those are lead levels that we see, between 5 and 10, that will become the action level.

ASSEMBLYMAN McKEON: So it's an actuarial prediction, as opposed to an actual number.

DR. RUCK: Preserving and improving the drinking water and the infrastructure to prevent and diminish further exposure is an essential element to decrease the adverse effects of these low levels of lead. And we want to prevent overwhelming existing systems that are in place. As those numbers drop from 10 to 5, it will increase the number of people dramatically, as you just heard, who do require assistance within the state -- the children and their families.

And just to reiterate, no blood level, as you've already heard, is safe. And we also know, again, that there is a much steeper decline at the lower levels of lead where the action levels are moving down to, than the higher levels and where they currently are.

I'd like to thank you for your time. And if there is anything else that I can answer, I'd be more than happy to.

ASSEMBLYMAN McKEON: Chairwoman?

SENATOR GREENSTEIN: I don't have anything right now.

ASSEMBLYMAN McKEON: Senator?

SENATOR BATEMAN: I have no questions.

ASSEMBLYMAN McKEON: Assemblywoman? (no response)

Not a lot of questions; just a quick--

SENATOR BATEMAN: Go ahead.

ASSEMBLYMAN McKEON: No, you first.

SENATOR BATEMAN: I just want to thank Bruce. Bruce also sits on our Watchung Planning Board, right?

DR. RUCK: On the Watchung Board of Health, yes.

SENATOR BATEMAN: Board of Health; yes. So thank you for your service.

DR. RUCK: Thanks; and yesterday--

SENATOR BATEMAN: And thank you for your testimony.

DR. RUCK: --our high school is testing-- As an aside, we're testing, this weekend, our high school. And we made the Poison Center available, as well, for any people in the community who have questions when those lead levels start to come back.

ASSEMBLYMAN McKEON: I just want to better understand the role of the Rutgers entity that you're representing. Are they there as a resource; do they have any regulatory function; are they put in place as the standard that people have to comply with? Could you just, kind of, kick that in for me?

DR. RUCK: Great question; thank you very much.

So the New Jersey Poison Information Education System is part of Rutgers University. We are in the New Jersey Medical School. We are not a regulatory agency; we are an informational resource. So we get, currently, over 50,000 calls a year from people who have questions, "My child just took X, Y, Z; what do we do?" "The child just ate; what do we do?" "I have a person in the emergency room who just drank a bottle of windshield washer fluid. How do we treat them?"

As it relates to this in the lead poisoning--

ASSEMBLYMAN McKEON: I can answer that one: Not good. (laughter)

DR. RUCK: Not good.

So as it relates to lead poisoning, we have made ourselves available, multiple times now, as I said -- Inglewood Medical Center, Morristown Medical Center -- as a resource. Because what we find is, people in the community -- the schools and everybody -- are really great at answering the technical: What's being done about it? But what people need the assistance with is, what's the effect on my child, what's the effect on my fetus, what's the effect on me, the patient? So we made ourselves available to handle all those calls that come in from the community, relating to the more clinical aspects of the situation.

ASSEMBLYMAN McKEON: Go on, please. I didn't mean to--

DR. RUCK: No, that's okay.

As I was saying, so anytime there is a question, we are available for the community, for the health professionals and, obviously, for legislators such as yourselves.

ASSEMBLYMAN McKEON: Yes; please, Senator.

SENATOR GREENSTEIN: I just want to ask you-- Obviously, mitigation for this problem is to deal with the water systems and the things that we're looking at. But is there any way to mitigate this problem when a child has -- when you've tested the child and the child has been affected? Is there any kind of medical mitigation for this lead exposure?

DR. RUCK: Thank you; great question.

The treatment is separation from the source, and that's what we need to do. We need to separate them from the source.

In your homes you all have smoke detectors; in your homes, you all have carbon monoxide detectors. If you have young children, unfortunately, right now, they are the detector. We do not have any other detection method, right now; unless somebody gets their water tested, which is not required.

Unfortunately, the child becomes the lead detector, and we want to move away from that. We want to mitigate the existing dangers so the child is no longer the detector, and the detection is done prior to that child ever being exposed.

SENATOR GREENSTEIN: I think I might have seen something about this on a news show; I'm not sure. But is there a way to mitigate in the case of lead paint -- is there a way to mitigate by using some kind of a paint that you put over it, that is absolutely-- For example, what you use in fire situations to cover over the smoke? There are paints that will actually hold in the -- whatever the contaminant is.

DR. RUCK: I have not heard of that, personally, so I cannot comment on that. In the past, when we've had lead paint issues, generally

we have to recommend removal of the lead paint, scraping it down, and appropriate contractors coming to mitigate it

SENATOR GREENSTEIN: But if the child is affected medically, IQ is down, all of that -- there's no medical treatment for that child?

DR. RUCK: What we will do, depending upon the child's lead-level, there are what we call *chelators* which will help remove the lead. But we generally don't start that type of treatment until the leads are in the 40s. Prior to that, and even when that takes place, the most important thing is separation from the source. And that is one of the most difficult things. Being with the Poison Center for 27 years, a good amount of our time -- with the lead-poisoned patient and their family -- is working with social services, trying to get alternative housing, trying to get their homes cleaned up and mitigated, and them out of their homes. That's the real treatment. And that's why, as we handle these hotlines, there are some people who have been shown to be positive for lead; and then they go back and have to investigate, and it turns out is coming from the home, or from some other sources as well.

So it's a very big social issue, not just a pure medical issue.

SENATOR GREENSTEIN: Thank you.

ASSEMBLYMAN McKEON: Assemblywoman.

ASSEMBLYWOMAN MUOIO: Just a follow-up on the Chairwoman's questions.

We have a bill that I am a sponsor on that would require a lead-free certificate for the sale of homes before -- or a tenant turnover, at the time of tenant turnover by landowners, homeowners -- so that kids, as you

say, are no longer being forced to be the canary in the coal mine on this issue. And the statistics we have seen indicate that to remediate a home from lead would be roughly \$5,000 to \$10,000. You know, you can encapsulate, which is, I think, sort of the painting thing that Linda was talking about -- painting over the issue is related to that.

But the cost, per child, per year, if a child has been poisoned by lead -- which, as you said, never goes away, at that point -- can be \$35,000 a year, per child. So just to get it in perspective.

DR. RUCK: Yes. I can't comment on the specific dollar costs on that.

ASSEMBLYWOMAN MUOIO: Yes.

DR. RUCK: Unfortunately, I know I just put all new windows in my home, and I know what that costs. (laughter) So \$5,000 does not seem like a lot of money to mitigate a home, if the windows and doors are involved.

ASSEMBLYWOMAN MUOIO: Right, yes.

DR. RUCK: It doesn't seem like a lot of money; that seems on the low side.

ASSEMBLYWOMAN MUOIO: It probably could be higher, but-- Okay; but thank you.

ASSEMBLYMAN McKEON: Thank you very much.

Any other members of the panel? (no response)

Seeing none, please let your boss know she should look up who Wally Pipp was. (laughter)

DR. RUCK: Thank you very much.

ASSEMBLYMAN McKEON: Thank you.

So we're going to skip Sharon just for a moment, because I know DEP and New Jersey Environmental Trust have crazy schedules.

So Mr. Kennedy -- Daniel Kennedy, the Assistant Commissioner for Water Resources Management at DEP; along with David Zimmer. And Mr. Zimmer is the Executive Director of the New Jersey Environmental Infrastructure Trust.

And we're going to be very, very interested -- as we will with all the witnesses, but particularly with this panel.

It's good to see you.

Thanks, you guys.

DANIEL KENNEDY: Good morning. Thanks for having us back.

My name is Dan Kennedy, Assistant Commissioner for Water Resource Management at the DEP.

DAVID E. ZIMMER: Good morning. My name is David Zimmer. I am the Executive Director from the New Jersey Environmental Infrastructure Trust.

JUDY KARP, Esq.: (off mike) I'm not testifying, but I am Judy Karp, from the New Jersey Environmental Infrastructure Trust as well.

ASSEMBLYMAN McKEON: It will remain to be seen, whether you're testifying or not, young lady. (laughter)

MR. KENNEDY: If you're up here, you're allowed.

MS. KARP: (Indiscernible) (laughter)

MR. KENNEDY: So I took the liberty of providing a package of materials -- that we would like to submit into the record -- to help

facilitate the conversation. And I will also make sure I don't take up all of your time, and--

ASSEMBLYMAN McKEON: No, please; we're-- Take your time.

MR. KENNEDY: Oh, I will take my time. But honestly, if I took all of your time, I probably could. (laughter)

Again, thank you for having us back.

We are going to focus, primarily, on the regulatory function of the DEP. And Mr. Zimmer is going to focus on the financing function after I'm done.

You've already heard, during your first two sessions, about the challenges our water sector faces, and some of the solutions. Last time I was here with you, we talked a lot about regulating water infrastructure in general, the importance of asset management, and our partnerships.

Today you're hearing about the issue of lead in drinking water; certainly a related issue. And I'm going to try to help communicate to you our role in this.

But let me, first, start by putting this into context.

The primary lead concern in New Jersey has been found from lead-based paint. Rarely is lead ever found in the sources of our drinking water, and the DEP is only one relevant State agency in the broader issue here with lead in the environment; with the Department of Health, our friends at the Department of Education -- who I was able to sit through some of their testimony before -- and DCA, as well, all playing important roles. And the Environmental Infrastructure Trust is a partner with DEP as well.

In the vast majority of cases, lead enters the drinking water through the water delivery system itself when it leeches from either lead pipes, household fixtures, continued (*sic*) lead or lead solder. And this leeching is caused by the corrosive chemical properties of the water.

Excuse me if I'm repeating somebody who has already provided testimony, because I wasn't here starting at 10 o'clock.

ASSEMBLYMAN McKEON: You're not.

MR. KENNEDY: Areas of the state with housing stock older than 1985, plus or minus, is where the issue primarily resides. Some have characterized this as an *inner-city issue*; but it's really an older community issue. This issue spans the entire spectrum of New Jersey's geography -- urban, suburban, rural areas -- because all of these areas of New Jersey have older housing stock, or some sort of school or institutional building that is of the age where you would suspect that the internal pipes or the external pipes of the water system would have been constructed in the time when standards were different, the science may not have been as well understood as it is now. And there are legacy issues all throughout the State of New Jersey.

This is a very complex issue. And the regulatory framework -- which is created by the Federal government, and implemented by each state with primacy authority, which New Jersey does -- is equally complex. It is important to mention that DEP can only address aspects of the issue today, related to the centralized drinking water assets.

So I'll, first, refer to my visual here that I have provided you.

This is not source-labeled, but the source is the EPA. And I'm using this to help you understand; and I have a blow-up version here to help you understand a little bit about the DEP's role.

ASSEMBLYMAN McKEON: It's like Eddie Murphy in *Trading Places*. Go real slow--

MR. KENNEDY: Yes. I didn't realize we'd have the fancy equipment; so I'm here with the old-school presentation. I apologize to members and the public who are not able to benefit from that, but I'd be glad to provide all of this, in digital materials, for the Committee, to be shared as well.

So you have your water main in the street. Typically, we don't see lead issues with the water main, because lead was chosen as a material product because of its flexibility. So you typically have lead in the service branch of the water system that leads up to the water meter of the house.

The Federal Lead and Copper Rule fundamentally deals with the centralized water infrastructure up to the water meter. And then the internal plumbing -- which is the on-premise plumbing -- clearly is a part of the scenario. But our ability to regulate and invest in water system improvements at the DEP or the EIT -- we get up to the water meter of the house. So this is both a public sector issue and a private property issue, and that adds to the complexity here.

And I wanted to make sure-- I could go get back to this, as a reference point, further on. But I wanted to make sure everyone had that context here, that the DEP's role in this goes up to the water meter, although the testing and the results come from the outlets that are in these buildings. So the measure of success is having lead levels drop, have less

lead in the system; but our authority, under the Federal regulation, really stops at the water meter.

ASSEMBLYMAN McKEON: So can I-- If you don't mind, can I stop you there? And I do appreciate -- it's very helpful, as far the graphic, or what have you.

But how much of the lead -- notwithstanding your testimony that the greatest percentage is from sources other than water -- but how much of the lead is from the pipes and infrastructure that precede the water meter -- that we're responsible for, so to speak?

MR. KENNEDY: Right. There are tens of thousands of service lines that remain lead in the State of New Jersey.

ASSEMBLYMAN McKEON: Do you have any way to quantify how much is from the -- we'll call *internal piping* -- from, what, the curb line in, or from the water meter in -- versus before?

MR. KENNEDY: I can't give you that number, because we don't do assessments of the internal plumbing. So in order to give you that breakdown, I would have to give the total; then I could give you roughly what the supply-side is. But there's an unknown; there's a data gap there. We're not the Department of Interior plumbing; we do the centralized plumbing.

So that's part of the challenges of-- We're going to talk a little bit to you about some of the challenges we see with the data; some of the challenges we have with implementing the Federal regulations. And that's part of the challenge -- that in order to do this, you need to have, kind of, more of a whole system approach, as opposed to just a regulatory approach that the Federal rules require.

ASSEMBLYMAN McKEON: Yes. You know, it's important. Because if we, 100 percent, remediated lead from the curb out, so to speak; that wouldn't mean that we would have dealt with the problem, because it may be coming from the curb in; or vice versa, for that matter.

MR. KENNEDY: Yes, it's a complex issue. And that's why I chose my words really carefully upfront, because it is quite complex.

ASSEMBLYMAN McKEON: I'm sorry.

MR. KENNEDY: Given the complexity, we have to tackle the issue from multiple different fronts; in just the regulatory front, it's not going to cut it.

ASSEMBLYMAN McKEON: Okay.

MR. KENNEDY: All right?

ASSEMBLYMAN McKEON: Please continue; I'm sorry.

MR. KENNEDY: So in 1991, the U.S. EPA issued the Lead and Copper Rule, which was raised, surgically, in 2000, and again in 2007; but fundamentally, hasn't been reconsidered as a basis, since 1991.

The State of New Jersey adopted this rule by reference, which means New Jersey implements the Federal regulations. There are approximately 1,300 public water systems in New Jersey that qualify as being regulated under the Federal Lead and Copper Rule. The Federal regulation focuses on two primary areas. Testing -- which all community systems; and non-transit, non-community systems-- We were here with you-- So, in general, when I explained this last time, community systems are, in layman's terms, for general, everyday use. Most of you have a home in an area that's hooked up to public water; you have a community water system. And a non-transit, non-community serves facilities that have

regular use, but are not day-to-day. So a school would be an example of a non-transit, non-community water system.

We do regulate, directly, some schools, because they have their own water sources. But most schools in the state have public water. So therefore, we regulate the public water system, and not the school itself.

And the second component of this is education. Once you test, there's a requirement to put the data on -- submit the data to the Department. DEP, in New Jersey, is -- what I've learned is rather unique -- is that we actually have a transparent, online water data system that other states do not have. This was uncovered, I think, in some of our work with the national organizations in survey results of the EPA with the Lead and Copper Rule. Many states don't require that; we have for quite for some time.

Educating the public on minimizing lead in drinking water is, kind of, the second leg of the stool. And the third leg of the stool is corrosion control. You've heard, many of the 1,300 systems we have are required to have corrosion control. The status and limits in the Rule -- the level of lead found at the tap, at which action is required, is known as the *action level*. And this is different than an MCL; you've heard about MCLs for PCBs and for other standards. This is not a drinking water standard, per se. The action level is an assessment of the entire water system, and it hits the point of 15 parts per billion in the community.

So what happens is, the water system will send out, say, 200 bottles for collection sampling with instructions, because the sampling has to take place *after* the internal plumbing. So what happens is, those customers chose to -- or chose not to -- participate in the sampling; the

sampling is done in a way that is targeted to the areas of each community that are suspected of having the greatest issues with lead. So it's a representative sample of the areas of the service area that are likely to have the biggest issues.

If 10 percent of those customer taps that are sampled exceed the 15 parts per billion, the system must undertake actions. So we have systems in the state that have exceeded the action level, but the action level exceedance is not a violation, per se. The violation occurs when they don't do anything about it. When they violate the Lead and Copper -- they violate the Lead and Copper Rule not when they exceed the action level, but when they fail to take steps required by the Rule to move forward.

The testing frequency of DEP's rules may mix the Federal standards. The Lead and Copper Rule contains schedules that determine how often water systems are required to test for lead. They start off on a pretty high frequency -- twice per year; and as they prove, over time, that they either don't have lead issues in the community or their techniques of managing those lead issues are working, the frequency of testing is ramped down.

And initial monitoring occurs when a new water system comes online, or may be switched when a water utility switches the course of water or changes its treatment process.

We have, in this state, just over 60 of our 1,300 water systems that have, what we call, an *open action plan*; where they have had, in the past, an action level exceedance, and have an action plan that they're working on. They don't get out of that status until a period of time, and sampling shows that they've resolved their issues.

So out of the 1,300 systems, we have a percentage of those that have those action level exceedances and are working on solutions.

Before lead in drinking water became a hot topic -- a national news story, because of events in Michigan -- DEP began a self-assessment, and reevaluated the components and requirements of this Rule as it's being implemented in New Jersey. I provided to you -- in the packet of information -- some of the back-and-forth that's gone on between the EPA and the DEP, which started over a year ago in earnest. And all of this information is actually on our Division of Water Supply website. So you can see that this interaction and this self-improvement process had started way prior to the work of this Task Force here; and it continues. It's important to know that DEP has participated in national surveys from EPA on state implementation of the Lead and Copper Rule. The responses to those surveys were made available to EPA, and we received a very good response from the EPA, in terms of our role under the Lead and Copper Rule.

And I want to briefly talk to you about some of the challenges we've identified. The first challenge is one of jurisdiction, as I talked to you about. The Lead and Copper Rule applies to water systems; not homeowners, hospitals, or schools -- unless they are considered a water system unto themselves, under the Federal definition.

Water systems do not own all the elements that deliver their water. So all the water delivery system is not owned by the water system, nor regulated by the DEP.

Water systems can control the water chemistry of the water they deliver through their corrosion control techniques, but they can't

control the internal plumbing and fixtures of privately owned service lines or privately owned internal plumbing fixtures.

Another challenge is sampling sites -- both sampling site locations vulnerability criteria. The Lead and Copper Rule requires sampling of the distribution system, and these sampling sites are usually homes. Large water systems may be required to collect up to 100 samples. Many water systems have expressed difficulty getting customers willing to collect a sample from their home once they commit to previous years of sampling.

The recent public concern with lead has also made it more difficult, because homeowners have expressed concerns about the impact of lead on their property values. So getting good samples back from homeowners has become very challenging.

Once the water sample from the homeowners goes to a certified lab so we can-- Although it may seem out of line, with your normal understanding of water systems, to have residents being participants in sampling, I can tell you that all the samples go to a certified lab, and the results are done under methods approved by the State of New Jersey.

Systems have resorted to providing incentive for sampling, but even this does not always guarantee appropriate customer participation. Based on these issues, in the past, many water systems have changed sampling sites between monitoring periods, which makes it harder to do an apples-to-apples comparison over the years. Because if you're not sampling from the exact same locations, it's hard to do an apple-to-apples approach and do a trend, over time.

Sampling quality is also an issue. Systems relying on their customers for sampling -- customers are responsible for the sample collection, and so there are quality assurance concerns.

And lastly, lead service line replacement is an overarching challenge. There are tens of thousands of lead service lines remaining in place in the State of New Jersey. And although we know that new service lines aren't coming in, the inventories on those lead service lines are maintained by the local water system -- whether it's public or private -- and the Lead and Copper Rule has little to say about aggressively pursuing their replacements.

So the primary technique of managing the lead issue is corrosion control -- making sure the water chemistry is not such that it has a corrosive tendency within the water pipes of the public and private sphere. And the replacement of lead service lines is certainly a challenge.

Mr. Zimmer is going to talk to you about what the EIT can do about that, in partnership with the DEP. But I do want to put on the table that there is a challenge there.

The systems that have open challenges are -- information on those are all available on our Drinking Water Watch website. And some of the interaction between EPA and the State of New Jersey -- you'll see that in the files -- I'm not going to go system-by-system.

And based on those challenges, we took the opportunity to implement a self-initiated improvement program at the DEP. We've created what we call a *Lead Team* in the Department. We've staffed that up; we brought in 10 new employees -- transferred-over employees to deal with this issue. And we did that over the period of the last year under the

guidance of Commissioner Martin -- directed to us. We submitted a letter in August 2016 that communicated our lead work plans to all the water systems in the state; you'll see that letter in the packet as well. And we talked about our strategy to review sampling plans, develop technical resources and guidance, respond to inquiries, and really push full compliance with the Lead and Copper Rule to the best of our ability.

The work plan includes various assessments and new policies; it establishes that systems will periodically revisit their plans, and not wait for something bad to happen. So we're asking for them to do more and better, and we're asking the same of ourselves.

DEP now provides clear guidance on requirements when the source of water is being changed. This was the crux of the matter in Flint, Michigan; so we've learned from that -- what's happened in Flint, Michigan -- to make sure that we don't have that occur in the State of New Jersey. We employ practices which identify sensitive population sampling sites, and provide immediate follow-up and assistance. And we've updated all of our guidance, and launched a re-education plan last year; and are working through all of the water quality plans that are required under the Lead and Copper Rule. And that work began in earnest last year, with our large water systems as the start.

We developed the website, which has materials for the public and for water systems, in cooperation with the Department of Education, that includes documentation and education for those users. And we appreciate the partnership -- I know you heard from Mr. Palmer earlier -- and we appreciate their partnership; quite challenging issues.

We've educated over 1,800 school officials in partnership with the Department of Education. Although we don't regulate the schools unless they have their own wells, we took it upon ourselves to work with the Department of Education and, together, we are going right to the folks who need the training; and we're delivering that very effectively and efficiently.

And we have done a bunch of other things that you'll see in our work plan that may not be worth mentioning today. But I am open to any questions you have, either today or after today, after you get through those materials.

And I'm going to end with saying that there are simple steps water users can take -- and we do have guidance on those simple steps -- which includes flushing lines in the morning by running cold -- bathroom and kitchen taps for a period of time. And everyone with an older home, I think, needs to be educated on this -- the risk that they could have in their home; and engagement to test to make sure that there's a full level of awareness for our property owners, whether they have children living in the home or not.

So that's the part that I'm going to play on the regulatory function. It is a very complex regulatory environment on this matter, and we're doing -- the State of New Jersey is doing its absolute best within that framework.

ASSEMBLYMAN McKEON: Thank you.

If it's okay, we'd like to talk with you first--

MR. KENNEDY: You got it.

ASSEMBLYMAN McKEON: --and then we'll go to the money man next--

MR. KENNEDY: Done.

ASSEMBLYMAN McKEON: -- as far as how he's going to pay for all of this.

So just to start things off-- Can you explain to me how the corrosive inhibitor application -- like, how that works?

I mean, I just want to make another point, too.

We're talking about lead today; but those very same pipes that we're talking about -- most of which are much older -- go to the initial problem we're here on, in effect: losing 30 percent of the water before it gets into our cups.

So although it might not make economic sense, just as it relates to lead abatement, there's a whole other component to that.

But that issue aside, that whole corrosive-- How does that work? Do you chemically scrub it, like, what is--

MR. KENNEDY: Sure.

So whether you're dealing with surface water or ground water, your water chemistry may be different. The biggest concern is when you have very low PH water chemistry. And that -- there are other aspects, but just focusing on that one, single aspect. When you have certain water chemistry in place, you need to put additives in place to make sure that that water chemistry is not corrosive. So it sounds fancy, because--

ASSEMBLYMAN McKEON: And is that happening from all the--

MR. KENNEDY: It happens centrally; it happens centrally, like you would do -- at the same place in the water system where you would treat for getting something out of the water. In this case, treatment is

putting something into the water to adjust the water chemistry. And the water chemistry will vary, system to system, depending on where it is in the state and their source of water.

So what is important is that the systems do what is called *water quality parameter testing*. So not only just testing for the lead; they're testing the entire chemical makeup of their water to make sure that that makeup isn't corrosive. And if it is corrosive, they put additives into the water to make it less corrosive.

ASSEMBLYMAN McKEON: And so the point of that part of the remediation happens from the water purveyors, so to speak.

MR. KENNEDY: That's right.

ASSEMBLYMAN McKEON: Okay.

MR. KENNEDY: I mean, there are some situations where large facilities can install corrosion control on their -- for their individual buildings. So it does exist in the water industry -- where that could happen. But mostly, and under the Lead and Copper Rule, it's a centralized application.

ASSEMBLYMAN McKEON: And following through with that line of questioning -- and thank you for that better explanation -- water filters. They work in a different way; they would have nothing to do with the pH or the corrosive nature. When we get into the \$33 million, truthfully it's a pittance compared to the amount it would cost to replace, from the water meters in, so to speak, that are our homeowners' responsibility. And I'm wondering if that's a more economical and effective fix.

MR. KENNEDY: It's really system-specific. So I don't think anybody would sit here and generalize on what the right fix is, statewide. It's important to understand the water chemistry of each system, have an appropriate inventory of the issue, and make a specific decision on what's the most effective and efficient use of the money, based on details of the system.

ASSEMBLYMAN McKEON: Again, it may be outside of your purview, but are filters something that can be helpful, when it relates to lead remediation; or no?

MR. KENNEDY: As long as you can assure that after the filter, there are no lead pipes. So there are effective lead filters, but the predicate for that is to make sure that after the filter, there are no lead issues.

ASSEMBLYMAN McKEON: So this is dumb John talking (laughter) -- I was thinking of the filter you might see-- like a Britta, you know, that's--

MR. KENNEDY: Yes.

ASSEMBLYMAN McKEON: --literally, at the source of the tap.

MR. KENNEDY: Right. So there's, as I mentioned, kind of one way everyday residents can maintain some assurance that they're not -- that they're drinking less lead in their drinking water. I mentioned running the tap water. There are many commercially available resources that you could go to Home Depot and consider investing in. But those are all personal investments. So yes, there are off-the-shelf solutions for residents to consider to minimize their exposure to lead in drinking water.

ASSEMBLYMAN McKEON: But filters can deal with that issue.

MR. KENNEDY: Filters, as long as they're maintained and replaced on the right schedule.

ASSEMBLYMAN McKEON: Got it. That's really interesting, and may be a part of a solution that's economical and can be done *en masse*.

MR. KENNEDY: Sure. And the predicate for all this is to know -- to have a good inventory of the issue. To make sure-- And that's why I think the Administration's initiative on lead testing in schools is so important -- that we will have a good baseline, in the context of schools -- a baseline that we never had before. I think we're only the second state in the union to require schools to test for lead in drinking water. So I think from that, a good baseline of information -- everyone will be very well equipped to make those remediation decisions.

ASSEMBLYMAN McKEON: Okay, thank you.

I'm going to turn it over to some of my colleagues.

Senator.

SENATOR GREENSTEIN: Thank you.

You've talked about this, sort of; but I just want to ask again.

What is known about the extent of lead-lined pipes and fixtures that are part of public community water systems, whether water main service lines or other? What do we know about those, in the public systems?

MR. KENNEDY: Sure. We know that lead is not typically an issue in water mains, because water mains need to be stronger than the lead. So historically, even back when we knew less about the health impacts of

lead -- because of the strength of the metal, they weren't, typically, a solution for water mains.

They were a solution for the service lines because of their flexibility in the homes. Each water system -- each of the 1,300 or so that I testified to -- they are required to have an inventory. They passed a test when the Rule was originally put in place, and have been required to maintain an inventory, over time. One of the issues that I identify is that we -- the inventories of those service lines are probably -- we know that they're stale; and that is going to be part of our initiative -- is to make sure that we have an up-to-date inventory, statewide, of all these. But the requirement is for the systems to maintain that inventory.

Sometime back in the early and mid-1990s we didn't have GIS readily available; we didn't have, perhaps, the technology that we have now to maintain from an information management system perspective. So we think that there are ways to modernize that data to make it more useable, and part of a strategy to then say, "All right, if my community has 2,000 lead service lines, where are the ones that we're going to start with -- because we can't do them all overnight."

So information, and management of information, is going to be something we're working on with our systems, moving forward.

SENATOR GREENSTEIN: Okay.

What about the presence -- the likely presence of lead plumbing in other kinds of buildings? You know, pipes, fixtures, solder -- in buildings that are not public buildings? What's our sense of -- overall sense of that?

MR. KENNEDY: Any building built before the mid-1980s has the same potential that a residential building would have. So we've

experienced exceedances of lead numbers in hospitals, in cities and suburbs; schools, which are in cities and suburbs. I think it's an older community, older building issue; and any older community and any older building could, potentially have an issue.

SENATOR GREENSTEIN: And, I guess, the last question would be, how do the State's regulations and programs differentiate between the public and the private buildings? And are there efforts to target places where affordability is an issue?

MR. KENNEDY: The Department regulates private buildings when they have their own individual water source. So if they have independent wells, or they're basically the purveyor of their own water source, then we regulate them directly and they're part of the 1,300.

If they don't, and they're receiving water from the public water system, we do not regulate those private buildings.

SENATOR GREENSTEIN: And is there anything in the regulation process to target places where affordability is an issue?

MR. KENNEDY: I'll let Mr. Zimmer talk about the details, but we recently were successful in securing additional funding, securing more flexibility and use of existing funding; and we're targeting that for lead service line issues. And we have applied an affordability aspect, where we're targeting areas that have less socio-economic advantages.

So it's not in our regulations; it's in our Intended Use Plan, which is an annual policy document. And we've applied some of that thinking into that policy document.

SENATOR GREENSTEIN: Thank you.

ASSEMBLYMAN McKEON: Thank you.

Assemblywoman.

ASSEMBLYWOMAN MUOIO: When you do your testing of your public systems, at what part of the system do you test? Is it-- You know, where in-- Is anything here tested that's within your domain there?

MR. KENNEDY: Yes. So part of the water quality parameter testing -- the water systems themselves test the point of entry.

ASSEMBLYWOMAN MUOIO: At the plant?

MR. KENNEDY: At the point of entry.

ASSEMBLYWOMAN MUOIO: Okay.

MR. KENNEDY: The Lead and Copper Rule, however -- the testing that determines the action level is at the outlet.

ASSEMBLYWOMAN MUOIO: So for you, that would be the meter?

MR. KENNEDY: No, it's at the end of the internal plumbing.

ASSEMBLYWOMAN MUOIO: Okay. So there's no way-- So you test in your plant, where you treat the water originally--

MR. KENNEDY: And that gives us the science that says it's not in the source.

ASSEMBLYWOMAN MUOIO: So there is no way, essentially -- unless you could put a meter, a test at the meter, right? -- there's no way to know where the problem occurs, whether it's the private landowner's responsibility, or it's something under the street.

MR. KENNEDY: Yes; that's a challenge, yes. We do not have the ability to make that determination.

ASSEMBLYWOMAN MUOIO: Okay.

Okay; that was my question.

Thank you.

ASSEMBLYMAN McKEON: Thank you, Assemblywoman.

Senator, any follow-up? (no response)

Just a minor follow-up: Just, you referenced before, and I read the same things; and you know, you've forgotten more than I know about it, concerning the water versus the paint and other sources -- as the bigger aspect of exposure.

Is there a way, though, to parse that, scientifically, when we do this testing -- to know where it came from; or, lead is lead?

MR. KENNEDY: Studies have targeted a number of 20 percent when you can--

ASSEMBLYMAN McKEON: I referenced that. What I'm saying is that, when you literally do the blood test -- the way it reads -- can you tell where it came from, if it was--

MR. KENNEDY: I think lead is lead.

ASSEMBLYMAN McKEON: Lead is lead.

MR. KENNEDY: I don't believe -- and maybe I'm not the right one to testify to this -- but I have not heard of any scientifically valid way to make that determination.

ASSEMBLYMAN McKEON: Okay; I appreciate that.

Stay with us, because other questions may come up--

MR. KENNEDY: Sure.

ASSEMBLYMAN McKEON: --but I think we're ready for the money man. (laughter)

MR. ZIMMER: Thank you, Mr. Co-Chairman; Madam Chairwoman, Committee members.

As this Committee is quite familiar with the NJEIT--

ASSEMBLYMAN McKEON: Could you just stop for one second?

MR. ZIMMER: Sure.

ASSEMBLYMAN McKEON: I just want to welcome Assemblyman DiMaio. We referenced, before, that you were on your way and doing other legislative business. And thank you for your hard work.

ASSEMBLYMAN DiMAIO: Thank you for your patience.

ASSEMBLYMAN McKEON: All good.

And I'm sorry. This is the third time I cut you off. (laughter)

MR. ZIMMER: It's quite okay.

But since you're all familiar with what we do, I'm only going to repeat some of this, for the benefit of the audience and the record.

The NJEIT is the State's infrastructure bank. We partner with the DEP in administrating the New Jersey State Revolving Fund. We were created by statute, by this very legislative group, 30 years ago; and in that 30 years, we've made over 1,300 loans, totaling more than \$7.1 billion.

We take funds that the State gets from the Feds, lend them out at zero percent, we match them with the triple-A money that the Trust borrows in the public markets. We're able to offer a blended loan package to our borrowers. This discounted rate that they get from us -- so it's between 25 and 50 percent of our triple-A rate, because of the state's zero percent funds -- we have saved, with principle forgiveness that we've given out and the refundings that we've done, we saved taxpayers a minimum of \$2.4 billion on that \$7.1 billion. So you can appreciate that this is a hugely

successful and very important program when it comes to financing water issues, like lead abatement.

Over the past five years, I can tell you that we have made several significant changes to this program to become more borrower-centric; changes that have made it easier, faster, and cheaper to use. Our incentive is to make sure that more communities come in and take advantage of your cheap funds, and pass those savings, those benefits on to ratepayers and taxpayers.

We have also modified our interim finance program. We now offer short-term construction loans. Through the direction of the Governor, and Commissioner Martin, and with the direct help of you and your peers on the Environmental Committees, we now offer constituents short-term loans. They have the ability to submit requests, any time of the year, and receive funding for that when they're ready. So, importantly, no debt service is due on these short-term loans until we actually turn that construction loan out into a long-term loan.

So again, from a cost-effective standpoint, if you have lead abatement projects, you want to come in through the Trust for financing on that because, not only is it very cheap, it's also very borrower-friendly and very cost-effective.

Particularly relevant to today's testimony, some of the programs that we've developed in the last few years: The Nano Program for small systems. *Small systems* are defined by the Federal government as systems that serve populations of 10,000 people or less. The Nano Program provides 50 percent principle forgiveness. So half of your funds that you borrow from us, you don't have to pay back. We call them *grants*; although,

technically, the program is not allowed to call them grants. So the lawyers have come up with this cute term called *principle forgiveness*.

So we offer principle forgiveness loans. In the three years since the Nano Program has been in existence, we've made 11 Nano loans, totaling \$8.6 million; and we've offered \$4.5 million of that for free. We have affected 49,000 individuals from these small communities. And I can tell you that those individuals would otherwise have not gotten those upgrades -- infrastructure upgrades, without the Nano Program.

Regarding current initiatives for lead abatement projects: The program has always been available to fund drinking water projects that address lead abatement. But as Mr. Kennedy made the distinction, it was always for the mains -- the pipes right down the middle of the street. Last year, after Flint, the EPA came up and said, "SRFs, you can now use the funds we give you and address lead abatement up to the meter. So you can go on to private property and use our funds to finance that project." Before, those projects were ineligible. So that was a big change for all of the states.

ASSEMBLYMAN McKEON: And just to start the program that you're talking about -- the \$33 million is for remediation up to the meter; nothing beyond that.

MR. ZIMMER: That's correct.

ASSEMBLYMAN McKEON: Okay.

MR. ZIMMER: The meter inside the house. So it's not just up to the house; but you're actually going to go a few feet into the shutoff valve. So it's literally up to the shutoff valve.

ASSEMBLYMAN McKEON: So in the example we were given, it would extend not only to the landscaping meter, but then to the internal meter, if you will, to the home.

MR. ZIMMER: That's correct.

ASSEMBLYMAN McKEON: Up that high.

MR. ZIMMER: So it's technically called the *shutoff valve* -- so wherever that shutoff valve is. So, yes, we would be probably, most likely, a couple of feet inside each of those homes.

Again, as Mr. Kennedy pointed out, this program is statutorily restricted. We can only lend to eligible borrowers. Eligible borrowers, under the Federal Safe Drinking Water Act, really constitute public water -- water systems that have a public water system ID. So the DEP has both public water and non-community systems that they issue PWSIDs to. If you are PWSID, you can come in and borrow from this program. If you don't have a PWSID, by Federal law, you are not eligible for the program.

So we have incorporated this flexibility; and we, essentially, offer three specific set-asides to drinking water systems to address lead abatement.

So in addition to the Nano loan program -- and again that's 50 percent principle forgiveness for up to \$1 million in loans for drinking water communities that are 10,000 population or less -- the program, this year, is going to be offering up to \$100,000 in principle forgiveness, 100 percent principle forgiveness. So the Department is making \$100,000 available in free funds for the development and implementation of an asset management plan to small systems, again, for the development and implementation of asset management.

Now--

ASSEMBLYMAN McKEON: So we're just going to stop there.

MR. ZIMMER: Yes.

ASSEMBLYMAN McKEON: So that's for communities -- so we're all clear -- of 10,000 or less?

MR. ZIMMER: That's correct.

ASSEMBLYMAN McKEON: And that's its soft costs, so to speak, as opposed to the--

MR. ZIMMER: That's correct. So technically, what has to happen is--

ASSEMBLYMAN McKEON: That's a lot of money.

MR. ZIMMER: --you would have to develop-- And it's not an entire asset management. An asset management -- for those individuals in the audience who might not know -- it is the identification of all of your asset components. It's a criticality assessment. So you have to know, when you put it in, what kind of condition it is; and, really, which are the critical components that, if they fail, will cause you the most harm, quickest.

You also want to do an assessment on your labor pool, right? What kind of human skills do you need? You have to do a capital budget. So it's not just, how much is it going to cost to replace this; but I have to make sure that I'm putting the money aside, every single year, to make those replacements.

So an asset management plan -- again, it's a holistic, strategic approach. So whether you develop that holistic approach all at once, or even just components of it, you don't know what you own and you want to

get somebody in to do that for you -- we offer up to \$100,000 to small systems to do that.

ASSEMBLYMAN McKEON: So can we just-- Make us understand as to why you came up with that number, and how many small systems there really are. And I say that -- I live in West Orange; we're all New Jersey American Water. Most of the state, a good piece of the state, is private purveyors. So that wouldn't count to them.

As it relates to those with-- How many communities is that, are we talking about? And where did you get the number from?

MR. ZIMMER: Well, so, 10,000 is a number that is defined by the Federal program. So it is an easy number for us to piggyback off of because, again, a lot of--

ASSEMBLYMAN McKEON: In the world, in New Jersey, how many communities is that? I don't mean how many communities are 10,000 or more (*sic*); but how many of those communities have -- or less -- but how many of them have well water; they have different -- just different.

MR. KENNEDY: It's in the hundreds; it's 300 to 500, I believe.

ASSEMBLYMAN McKEON: It's 300 to 500?

MR. ZIMMER: Yes.

MR. KENNEDY: Yes.

ASSEMBLYMAN McKEON: There are only 500 and -- what? -- 66 towns in New Jersey to start with.

SENATOR BATEMAN: There are 565.

ASSEMBLYMAN McKEON: It's 565?

UNIDENTIFIED MEMBER OF AUDIENCE: (off mike)
(Indiscernible)

MR. ZIMMER: Well, so, you have homeowners' associations; so it's not just municipalities.

ASSEMBLYMAN McKEON: That's why I'm asking the questions.

MR. ZIMMER: Right, yes. So--

MR. KENNEDY: We can deliver that exact number; I don't have it off the top of my head, but it's in the hundreds, for sure.

ASSEMBLYMAN McKEON: And frankly, many communities that are 10,000 or less are on -- use American Water, or whatever company that you can think of. So I'm wondering how big of a universe that is.

MR. ZIMMER: So I believe the number -- and again, this is really folks at the DEP who deal with the drinking water system-- but I believe, as Dan said, we have somewhere between -- in total drinking water systems in the state -- it's somewhere between 500 and 600. Of that, the (indiscernible) 10,000 is somewhere between 300 and 400. Of those, how many have their own -- are not connected through a distribution; through, like, New Jersey American is providing the water. What you have to appreciate with the large systems -- specifically, the stock-owned, the private systems -- their stakeholders demand that they practice asset management, because we understand that this is the most effective and cost-efficient way to run a program.

So I live in Princeton. New Jersey. American provides our water as well, right? I don't have to worry about what New Jersey American is doing because I know that the BPU and their stockholders -- their equity

holders -- make sure that they practice asset management. They have an asset management plan that's inches thick.

So we have \$1 million this year -- that we have, and have set aside for this program. So not everybody is going to spend \$100,000. This is the first year we've done with. We actually offered a similar program two years ago, and we didn't have any takers. Now, asset management is becoming more and more of a requirement, and less of an option, all over the country. Flint, Michigan, is in everybody's recent mind. So more and more of these small communities are really starting to think strategically.

And so again, this is the first year we're doing it; we have \$1 million set aside. We assume we will get somewhere between 15 and 20 takers on this. And that's 15 to 20 takers that we wouldn't have had, had we not done this, right?

So again, while this might be an indirect approach to dealing with lead abatement, I would say don't underestimate the value -- the impact that having a strategic plan to address all of your operating issues, including lead, has on a system.

So that's the second specific program that we're offering that touches on lead abatement.

The third one -- and really the big one, as Assistant Commissioner Kennedy mentioned -- the Department's putting aside \$30 million in principle forgiveness funds. And that program is 90 percent principle forgiveness; so that's the 33.3 percent in total funds.

So if you are a system -- and let's say it's just one system, to make it easy -- you have \$35 million in project expenses. We, through this program -- we will provide you a \$30 million principle-forgiveness grant; a

\$3.3 million loan from the DEP at zero percent; and the remaining \$1.7 million -- you can either come in to the program under our regular, and get a 75-25 loan -- 75 percent at zero percent -- or you can come up with the \$1.7 million yourself. Most people come in for the entire amount from us, and we just figure out the ratios for them.

ASSEMBLYMAN McKEON: Well, can we do it -- play the game again--

MR. ZIMMER: Sure.

ASSEMBLYMAN McKEON: --as it relates to how many places are -- how many communities that have these kinds of systems have that, per your income-eligibility -- I think it was if they're under the average median. I'll use Irvington, New Jersey, as an example of, presumably, being under the average median income of the rest of Essex County. How many communities like that would be potentially eligible for the total \$33 million?

MR. ZIMMER: So I know, as part of the assessment to make this specific set-aside, the DEP did that assessment. I don't know the numbers offhand, do you?

MR. KENNEDY: I don't. But to make this simple -- I think we're going to be oversubscribed. And clearly the \$30 million we're putting aside is only the start. So there are going to be communities that we're not able -- that may request this, and we're not going to be able to satisfy their requests in this year.

ASSEMBLYMAN McKEON: I know this was rolled out, or at least made public, in the last week or two. So there's nothing in the queue yet?

MR. KENNEDY: No, it was over a month ago now. And I think we had it rolled out before the last hearing, and we testified on it at the last hearing. And we have a draft period where we accept public comment on the Intended Use Plan. The public comment period, I think, has just ended, or is close to ending. So based on the feedback we get, we make some revisions; and we're, kind of, still in the listening phase. And then we lock up the Intended Use Plan, and we accept applications based on it. We have received inquiries through our Department -- of takers who are interested in taking this money, and working with systems--

ASSEMBLYMAN McKEON: When will you be poised to accept applications once the pre-process is completed?

MR. KENNEDY: It's a rolling process, so we haven't -- I don't think we've received any applications. So they come in; we don't set the terms up front. But I don't think we've received applications yet, but I would expect them to be rolling in--

ASSEMBLYMAN McKEON: Well, I expect you would. And you said the public comment was just ending, and--

MR. KENNEDY: Weeks to months. Yes, we would expect applications to come in -- or these applications, very shortly, after the IUP is finalized.

ASSEMBLYMAN McKEON: And what you're projecting from the interest is that the \$33 million will be a start, as opposed to--

MR. KENNEDY: There's no representation here that that's going to solve the problem. But it's \$30 million of funds that was not-- New Jersey worked really hard to get. We were told "no" several times from the EPA before they said "yes." So we think it's responsive; and this is the

area that we heard from our water purveyors -- that they're facing multiple challenges, and we need-- "Try to get us a better deal." And this is certainly a much better deal for them, to start, and we'll see where it goes.

MR. ZIMMER: So Mr. Co-Chair, if I can actually just -- (indiscernible) for just a little bit, and really bring you in under the covers on this. (gavel sounds)

ASSEMBLYMAN McKEON: Move on. (laughter)

MR. ZIMMER: So the State gets money from the Feds every year, and we're allowed to give a portion of that out in principle forgiveness in these grants. Some years, we did not give out all of those principle forgiveness -- going back 10, 15 years. What New Jersey did was, we came up with -- the Department came up this idea, and went in front of Region 2, and then Headquarters, and said, "Look, we'd like to go back and claw back all of those loans that we made, that we could have given out as principle forgiveness. We know that once you shut a capital grant, it's shut for good. But you're making this big issue about lead -- it is a big issue -- we need funds to give away to these communities. Here's one way we think we can all work together."

And as Dan said, the State got told "no" a number of times.

The bottom line is, through a lot of persistence, we brought neighboring states in with us. The EPA gave the nation the ability to go back and claw back. We were able to get \$30 million, which is what we've offered here. Because of New Jersey's actions, every state in the country, now, has been able to do this.

SENATOR BATEMAN: Good job.

ASSEMBLYMAN McKEON: Good job.

MR. KENNEDY: You owe me \$20. (laughter)

MR. ZIMMER: Really, just to wrap it up.

Again, you know, when you take into account asset management; when you take into account our Nano Loan Program; and when you take into account what we think is a pretty creative way to address this, in whole, I think the Department and the EIT's position is that this state is in a better position than it's ever been to address lead abatement -- certainly, given the matters for which we have control and responsibility.

ASSEMBLYMAN McKEON: Pardon us, for a minute. We're thinking about having you both arrested. (laughter)

MR. ZIMMER: It was her fault. (referring to Ms. Karp)
(laughter)

ASSEMBLYMAN McKEON: Thank you; excuse us, for a moment.

Further questions? (no response)

Assemblyman, Assemblywoman?

SENATOR BATEMAN: Thank you.

ASSEMBLYMAN McKEON: Chair? Are we good?

Okay. And we're teasing each other a bit, but I really do appreciate both of your roles -- and all of your roles -- in the leadership. This is a great start, relative to making these sums available.

I think we talked a little bit about -- although it's not quite the same -- a program similar to tank removal, where money is available to motivate people to do what has to be done, not only for their own good, but for the good of their neighbors.

And I'm just curious-- I am just intrigued by the whole filter thing -- as actually being something that can happen quick and being economical. And what potential role you could think, if any, either DEP or EIT could play in making funds available?

MR. ZIMMER: So if a community wanted to offer a program like that to its citizenry -- certainly we make loans to water systems, to communities. I guess what we'd have to do is research that specific issue -- if using the funds from this program -- SFR funds from this program for the purchase of -- the procurement of lead-filtering at the tap -- lead filtering systems at the tap would be an eligible SFR expense. Then, by all means, we could work with New Jersey American or, again, any other public water system to say, "We will make you loans." They would, in turn, make a loan or some kind of financing available to the communities that they serve -- offer that out. But they would be responsible for paying us back the loan.

ASSEMBLYMAN McKEON: Right. I appreciate hearing from your end. I don't know if there's any legislator imprimatur that might be needed; and we'll look at that as well.

Like I said, it's just getting to the goal line. It's not the long-term solution but--

MR. ZIMMER: Sure.

ASSEMBLYMAN McKEON: --there are a lot of different-- The science shows the different heavy metals that do get removed by a certain grade of filter; and it might be worth something for us all to think about.

MR. ZIMMER: Sure.

MR. KENNEDY: Depending on the flow of the water through the filter, they could be needed to be replaced upwards of every couple of months. So it's not just an upfront capital that we're thinking about; it's the long-term O and M, and the (indiscernible).

ASSEMBLYMAN McKEON: Okay.

MR. KENNEDY: So we have to think this all the way through if we're going to be involved with it.

ASSEMBLYMAN McKEON: Okay, good.

MR. ZIMMER: And I would say that, from a legislative perspective, our statute and the Federal laws require us to make a loan like that. It's just, is the project an eligible project? And that's really a Federal issue.

ASSEMBLYMAN McKEON: A Federal issue.

MR. ZIMMER: So we will look into finding out whether or not procuring *en masse*, if you will, a lot of filters for a community is an eligible expense under the SFR program.

ASSEMBLYMAN McKEON: Okay. Yes, we'll see. Because *infrastructure* is a big buzzword now in the Feds; so we'll see what comes of that.

Thank you all.

MR. KENNEDY: Thank you.

ASSEMBLYMAN McKEON: Any other questions? (no response)

SENATOR GREENSTEIN: Thank you.

ASSEMBLYMAN McKEON: Co-Chair.

SENATOR GREENSTEIN: Okay, the next person is going to be Sharon Kregel from -- she's Policy and Outreach Director at the Education Law Center.

ASSEMBLYMAN McKEON: You don't look like Sharon.

D A V I D G. S C I A R R A, Esq.: I'm not Sharon Kregel.
(laughter)

SENATOR GREENSTEIN: Oh, you do not. (laughter)

David Sciarra.

MR. SCIARRA: Yes; Sharon couldn't be here, so I am subbing in for her.

It's nice to see you, Senator, and members of the Committee--

ASSEMBLYMAN McKEON: It's nice to see you as well.

MR. SCIARRA: --and to be here. We're normally in front of the Education Committee, and you're probably wondering why we're here.

I'm going to try to talk a bit about, I think, a question that was raised, by several of you, to the Department of Education folks who were here that didn't quite get answered.

So first of all, I do want to commend the Task Force for working on putting together a comprehensive approach to ridding New Jersey of what is a devastating scourge, which is lead poisoning -- which, as you know, impacts children the most. And as has been mentioned, there is no safe level of lead for kids. And that exposure impacts their brain development, cognitive and memory capacity, and other functions essential for learning, a healthy childhood, and a productive life.

I should mention that under the Federal IDEA statute, the special education law, lead poisoning is defined, specifically, as a factor that

puts kids at risk for developing a disability and requiring special education services. I want to mention that, briefly, at the end.

But what I'm here today to talk about is lead in the water supply of school buildings, which was discussed earlier by the Department of Education.

As has been mentioned, we don't know -- we know that some of our school buildings have lead in their water supply; but the number is, as of yet, unknown. I think you questioned the Department about that, in terms of their testing program. But we know that a number of buildings already have elevated lead levels in their water supply, and that poses a threat to the health and safety of the students, children, staff, faculty, and parents who use these buildings every day.

The condition in Newark is most notable, as you know -- that, based on press reports, parents and students learned that numerous -- I think over 30-some buildings -- in Newark contain elevated levels of lead, warranting an immediate shut down of fountains, faucets, sinks, and other fixtures in all of the buildings; a complete shutdown. It also triggered the Newark District to put in place emergency protocols -- to use bottled water in the buildings -- until such time as the problem could be remediated and the water supply determined safe for drinking, food preparation, and the like.

So Newark's response -- the District's response -- I think you heard it from the Department, what they tell the districts to do in this situation -- is to put in place emergent measures to prevent children from further exposure to lead, shut off the water supply, and put the schools on a

regimen of bottled water. This emergent response is entirely appropriate -- I'm not questioning that -- given the risks of any lead exposure in children.

But the long-term remediation is what I really want to talk about; and I know it's a question you raised, but really didn't get answered.

So what do we do in buildings where this occurs?

We do know what the protocols are; Paterson is a good example of what needs to be done. They had the same problem, and moved ahead with not just bottled water, but they're working to come up with a remediation program in the buildings -- short of knocking them down and replacing them, right? And a lot of these are old schools that are subject to potential redevelopment or reconstruction under the School Construction Program at some point in time.

But what we know has to happen here is that the -- there has to be the installation of filtration systems on every fountain and other water outlets within the building; which, in many of these buildings, can be in the tens or hundreds of outlets. To remain effective -- as has been mentioned, I think, just previously -- these filtration systems must also be checked and flushed on a regular basis by custodial and other staff. And this is a costly process; that's the point I want to make. The cost of installing filtration systems in the contaminated Newark school buildings is upwards of \$3 million or more; I think Paterson -- it was well over \$2 million. Not to mention the cost -- ongoing cost of implementing tracking and flushing filters, and ensuring their proper replacement on an ongoing basis; because, frankly, that's what got Newark in trouble in the first place -- is that they didn't do the kind of filtration monitoring that they should have done in the first instance.

So the good news for Newark -- and, particularly, the other urban districts that are the, sort of, old Abbott camp; these SDA districts, as they're called under the School Construction Law -- is that the Schools Development Authority (SDA) and the DOE are responsible -- under those laws, and under the Abbott rulings -- to finance the construction and improvement of facilities, improvements in those buildings; and that includes fully funding -- full funding of emergent repairs and capital maintenance projects. It's important to understand that in those 31 SDA districts, the State is responsible for full financing of not just major capital improvements -- such as new schools, or additions, things like that -- renovations -- but also emergent repairs and capital maintenance projects.

So that's good, right? We ought to be able to deal with the remediation problem and not have to wait.

The bad news -- and this is what I'm here to tell you about -- is that both the SDA and DOE have been very unresponsive to our repeated requests that they work, collaboratively, with Newark and other districts -- Camden was mentioned; still on bottled water, 10 years later -- to determine the need for and cost of permanent remediation of the lead water contamination; and the financing and undertaking of those projects on an expedited basis. In fact, in a recent letter we got from the Commissioner and the CEO of the School Development Authority -- which I'll share with the Chairs -- they excluded from consideration -- expressly excluded from consideration all plumbing and water supply system repairs in the 2016 Potential Emergent Projects Program. This is a program that's routinely -- well, it's periodically undertaken by the SDA and DOE, where they ask the SDA districts what emergent projects do you have; bring them forward and

we'll look at them. In this iteration -- this last iteration of that Potential Emergent Projects Program, they expressly excluded any capital maintenance or emergent repairs with respect to plumbing systems; which is hard to understand why they did that.

I should mention, in the Camden situation -- yes, they have been on bottled water for 10 years. But the District, at one point a few years back, asked the SDA to finance a more permanent remediation program to put filtration systems and all of that; remove some of the piping around the fixtures; to get off of bottled water, and get on to a permanent water supply. And they turned it down as *not eligible* for funding, which we think is, frankly, wrong.

So the point here is that actions that the SDA and DOE have taken are inconsistent with their obligations under the School Construction law and the Abbott rulings, and not in the best interest of the educators and students who work in these buildings.

The agencies seem to have taken the position that it is acceptable for districts that have schools like this to remain on bottled water indefinitely. In fact, we believe one or more Camden schools, as has been talked about, has relied on bottled water for over a decade, as the SDA and DOE have refused to fund more permanent remediation projects.

I raise this, now, because of what was discussed earlier -- the statewide -- the testing results that are going to come out from the DOE statewide testing program that you all authorized and funded in every school building. We need to now take up the issue of what are the ranges of remediation steps that are going to be needed? And in those buildings where there is a serious problem -- I'm not talking about one fixture or one

faucet, something like that -- but where there are buildings, like in Newark, where it requires the entire shutdown of the water supply to the building -- we have to be prepared -- not just to go to bottled water on an emergent basis, but also to make available funds, through the School Construction Program, for capital maintenance and projects that can get these things done and fixed.

We have a lot of schools-- The biggest complaint from the Ironbound schools in Newark-- Parents are just fed up with the bottled water. And bottled water is not a good solution on a long-- It's fine on an emergent basis; but on a long-term basis, it's not an acceptable solution.

So we recommend to you that a key element of a comprehensive response to lead in the drinking water must be an aggressive program of State-funded repairs in any school building, in either the former Abbott districts, where lead testing shows elevated lead levels; and also prioritize grants to the other districts, that are available through the SDA.

Lastly, I just want to mention an issue I think that's beyond the Committee.

We serve -- the Education Law Center-- I serve on a legal team now that is involved in a lawsuit against the state of Michigan over the educational fallout from the contamination in Flint. The entire school-age population in Flint was exposed to elevated levels of lead for 18 months, unbeknownst to them. So, in effect, the entire school-age population -- the entire population of children -- some 30,000 children -- are at risk of developing a disability. And out of that work -- this case we're doing with the ACLU of Michigan; it's pending in the Federal courts in Michigan -- I've learned a lot about the issue of dealing with the effects of lead on kids,

and their learning and ability to succeed in school. I know this may be beyond the scope of this Committee, and maybe it's an appropriate issue for the Education Committees, or some Joint Committee on that side. I would urge you to talk to your colleagues about this, because one of the-- We just had a poisoning conference in Princeton that went over this issue in depth; we had all the experts in to talk about it. And we do need to start to take up the issue of, how do we address the effects of lead poisoning in children in our schools, and the educational response that's needed to deal with kids who have developed disabilities which, many times, may not be connected to the fact that they were lead -- that these are, sort of, the effects of their -- of lead poisoning when they were youngsters or whatnot.

Trenton is an example, with a lot of kids who are in the public schools now, who have been subjected to elevated lead. And if you study this, in terms of the fallout on kids, it's really almost -- it's an insidious toxic thing that happens to children. Because it's not like a disease where you know it's happening, and you can treat it. It's episodic; it can hit kids-- The effects on kids are different for every child, so forth, and so on.

The point I'm making here is, that part of what we need to do is take up the issue of dealing with children who are exposed to elevated lead, and at risk of developing a disability when they get to school or in preschool. The good news is that we have universal preschool in our cities, so we have them in a setting where we can work with them. Schools will need special education and other interventions to assure success in school, so forth, and so on.

What we also need to deal with is the current disconnect in this area between the public health system and the school systems. There isn't

any connection between the blood-lead testing that goes on through the public health system and the schools, so the schools don't even know. And the training that's needed, and so forth, and so on -- I don't want to get into that here, but I do want to raise it as a crucial element of what needs to be-- If we're thinking about a comprehensive plan to deal with lead in New Jersey, that goes beyond just the infrastructure and drinking water here, we need to put on the table how are we going to deal with the effects of lead on children, and their learning abilities, and their ability to succeed in school, and so forth, and so on.

So I'd urge you to talk to your colleagues about taking that issue up as soon as possible.

Thank you.

ASSEMBLYMAN McKEON: Thank you very much.

Co-Chair.

SENATOR GREENSTEIN: We asked this of some of the earlier witnesses as well: If a lot of the lead problem in the schools comes from the paint -- less so from the pipes, and that sort of thing? I mean, would you agree with that, or--

MR. SCIARRA: I don't think we know.

SENATOR GREENSTEIN: We don't really know that.

MR. SCIARRA: I don't think we really know.

SENATOR GREENSTEIN: Just to finish the question-- I was going to say, it seems like paint and other kinds of things have been a problem for a long time.

MR. SCIARRA: Yes.

SENATOR GREENSTEIN: People were exposed to them 50 years ago. I'm trying to figure out -- do we have more kids with lead exposure now, and could this be from the pipes getting older and leeching lead? Or what's our theory, if we do have more kids than we have ever had?

MR. SCIARRA: I think we really don't know. I think that we do have data from the Health Department, and there are other people who could -- I've seen the data; I'm not an expert on this. But there's a lot of data on elevated -- you know, from blood testing of children, levels of elevated lead in kids. I know in the data in Trenton I've looked at -- it's still pretty high, you know, surprisingly, after all these years.

What we don't know is around the issue of, you know, kids in school. Because a lot of that data from the Health Department isn't transferred to the schools and put in the child's record. It should be. And now there are issues around that, with FRPA and things like that -- I won't get into those details -- in making that available. We need to do that.

We also need, I think, particularly in the preschools in our cities -- because we do have all the kids in preschool, unlike in Michigan, where the kids are -- the 3- and 4-year-olds are not. They could be home, they could be anywhere. We have them, mostly, in our Abbott preschool program. There needs to be more, sort of, screening -- at least a preliminary screening, a red flag screening of kids, to sort of-- When they're there, to sort of start to build that database and begin to identify kids; so then you can go back and get their records, look to see if they've been tested, or get them to testing. And so that at least you know that these kids have been exposed.

Now, whether or not they develop a disabling condition as a result of that is not, you know -- who knows? I mean, some portion of them most likely will; I don't think the science is all that clear about that. But it is a serious impact. I think a lot of kids we may be dealing with in your schools as behavioral problems, disciplining them, kids dropping out, so forth, and so on -- all kinds-- And these kids may be-- You know, it's not that they're "bad kids." They're just suffering from a condition that nobody has really identified. And it's a much more complicated issue than we have time for here today.

But I do-- This goes back to my call, apropos of your question of-- We have to look at the educational fallout from the poisoning of kids, the exposure of kids to lead, which I suspect is largely in homes; but may also be occurring in schools, to some limited extent.

SENATOR GREENSTEIN: Thank you.

MR. SCIARRA: The good news in our cities is, we've done a good job of -- we're replacing our older schools now, slowly, through the School Construction Program. So we don't -- we have a lot of new schools coming on; Newark just opened up a new school in the Ironbound, so forth, and so on. Trenton Central High is now under construction, so we don't have to worry about Trenton Central High and the lead that was probably in the paint in the old Trenton Central High School. So we're, kind of, moving in a good direction, that way.

But the point I'm making here, though, is we would like to see the DOE and SDA come up with a comprehensive-- Using the School Construction dollars that are available and the obligation they have to deal

with this, to really prioritize in those schools where there's lead in the water supply. And even if it turns out to be in the paint, the money is there to get this done. We just need to get organized and get moving.

SENATOR GREENSTEIN: Thanks.

ASSEMBLYMAN McKEON: Assemblywoman.

ASSEMBLYWOMAN MUOIO: Thank you.

I'm glad you mentioned that Princeton forum. I was at that forum; it was fascinating.

MR. SCIARRA: It was really excellent.

ASSEMBLYWOMAN MUOIO: And if they ever put a transcript together -- I don't know if all the testimony given at that--

MR. SCIARRA: I think they were supposed to get it up on the web; I'll find out, and I'll let the Committee know.

ASSEMBLYWOMAN MUOIO: Yes, it would be--

MR. SCIARRA: I would urge your colleagues to take a look at some of the information that came out of that.

ASSEMBLYWOMAN MUOIO: And what you mentioned about the educational ramifications of-- Senator Greenstein had asked earlier about the cost of treating students or children who have elevated blood positioning; and that, medically, there really isn't anything you can do once it's in the system. But part of that statistic -- about the \$35,000 per child, per year, in terms of long-term costs -- I think was trying to get a handle on what the educational -- health, and educational, and behavioral costs combined can -- the sort of costs that attaches to all those myriad of issues that now result from blood poisoning.

And I represent the City of Trenton here; and the last set of statewide testing for our 3rd graders in Trenton show that 80 percent of the 3rd graders were not reading at grade level in the city. And as you said, we can't -- we don't have the ability, at this point, to attribute that to whether it's lead positioning or some other issue. But it is hard to imagine that lead positioning does not play a role in a statistic of that nature.

So you're right -- that we have a huge problem on our hands that we have to address.

I had one question, and I don't know if you would know the answer to this, but you brought up the SDA projects and trying to tie in some of -- dealing with the lead issue through that venue.

Do you know-- We were given this -- this is of a home, not a school (referring to diagram). But for new construction that's done with public dollars, of some the schools, or other public buildings -- is there a requirement that some sort of filtration be put in place just to deal with anything that could be occurring? I would assume that there's no, obviously, lead going into the buildings now; the new buildings. But in order to address anything that could be under here (indicates) -- because we were told that they tested the plant, and then they tested the faucet, essentially-- But for anything that could occur in the service branch or pipes -- do we require that there -- or should we require, it sounds like -- that some sort of filtration be placed as early in the distribution system of a new building as possible so that we can catch anything that may be coming into these new structures?

MR. SCIARRA: That's a-- I don't know. I'll find out and let you know. In terms of the new buildings that SDA is building--

ASSEMBLYWOMAN MUOIO: Right.

MR. SCIARRA: --and that they built in Trenton, and now that Trenton Central High School is under construction--

ASSEMBLYWOMAN MUOIO: Yes.

MR. SCIARRA: --so forth, and so on.

I do know that in Newark, the issue -- I'm told -- is not the -- that the lead in the buildings in Newark -- those 30-some buildings -- was not from the water supply system coming into the building; it was actually in the buildings. It was the older pipes in these buildings -- the lead soldering, and so forth, and so on.

ASSEMBLYWOMAN MUOIO: And that could be part of it. But my understanding, from our previous speakers, was that they cannot -- they do not -- and correct me if I'm wrong, anybody -- but it appears that they test at the facility, at the public facility, distribution facility; and then they do not have a way to test whether any soldering, or any leeching, or anything that's coming in-- And leeching could be dust from paint that gets into the ground and gets into the system. They have no way of testing -- from the water plant to the faucet -- where it may be occurring.

MR. SCIARRA: I'm just saying that all I know is that -- what I was -- and I don't know the answer to the question--

ASSEMBLYWOMAN MUOIO: Okay.

MR. SCIARRA: --but I think what I-- So Newark, now, is-- Because the SDA was unwilling to consider an application for funding to, basically, put in place a comprehensive filtration system within the schools -- right? -- so what you basically have to do is you have to put these filter systems on every faucet, sink, kitchen sink -- all of the water source outlets.

You have to, sometimes, replace the piping that's right there. But then you also have to put in place protocols for regular flushing and maintenance of those filter systems.

So Newark is about to launch an effort to do that in these 32 schools. Because the State refused to fund it, they're taking it, basically, out of their own funds; and Paterson had to do this too. And these districts are pretty cash-strapped to begin with.

ASSEMBLYWOMAN MUOIO: Struggling as it is.

MR. SCIARRA: And then it also took a lot of time to get to this point, right? So time has been wasted.

What I am suggesting is, one of the things you all need to look at is, is the question I think the DOE folks had, sort of, put off; I was kind of listening to their testimony. So, okay -- what happens in buildings now? What do we do in buildings where there is a problem -- whether it's coming in from the outside, or in the fountains, or faucets now -- where it's at the level where we have to shut the water supply down in all or portions of the building, and then undertake more permanent remediation efforts?

The good news is, we know, I think, what to do without reconstructing the building, or removing all the pipes, and so forth, and so on. But it is costly. And so that's where we need to get the State organized; we need to get DOE and SDA organized so that they're prepared to accept applications from these districts -- or proposals from these districts -- and begin to work with them and get these projects funded and done.

ASSEMBLYWOMAN MUOIO: Thank you.

ASSEMBLYMAN McKEON: Thank you, sir.

SENATOR GREENSTEIN: Thank you.

MR. SCIARRA: Thank you.

ASSEMBLYMAN McKEON: Any further questions? (no response)

MR. SCIARRA: Thank you; thank you, all.

ASSEMBLYMAN McKEON: Seeing none, we appreciate your thoughtful testimony very much.

MR. SCIARRA: You're welcome.

ASSEMBLYMAN McKEON: Go ahead, Chair.

SENATOR GREENSTEIN: It looks like the next person is Doug O'Malley, Director of Environment New Jersey.

ASSEMBLYMAN McKEON: Without his two children in tow.
(laughter)

DOUG O'MALLEY: Yes, they've come to the State House before; but the budget address is only so much entertaining.

ASSEMBLYMAN McKEON: Geez. That's worse than a Civil War battlefield; geez. (laughter)

MR. O'MALLEY: Yes. Although my daughter actually did love these lights (indicates); so did my son, Malcolm. So we'll have to bring them back.

So I just want to start off-- My name is Doug O'Malley; I'm the Director of Environment New Jersey. And first off, I wanted to thank this Joint Legislative Task Force for tackling this issue; and for each of the Committee members, not only for the work today, but also the work to pass legislation to deal with this issue.

Because that's really what the mission of this Task Force needs to be -- not only figuring out the problems that we have, but what are the solutions that we can be advocating for.

And, you know, beyond that thanks -- and thanks to the testimony from the Education Law Center -- you know, we, quite frankly, can't deal with a crisis we don't know the pervasive nature of. And I think that's one of the statistics that you brought up, Senator Greenstein, at the beginning of this hearing -- is that 26 percent of kids in this state get tested; that means that three-quarters don't. Staci Berger from Housing and Community Development -- with whom we work often -- says we shouldn't be using our children as lead detectors; but the reality is, three-quarters of our kids -- we don't even know if they have elevated levels of lead in the blood.

I want to focus on -- and I have submitted testimony to the Committee, which I will summarize. But I did just want to make some additional, kind of, global points. And that, as we've heard before -- yes, the largest source of lead does come from lead dust and lead paint. But the pervasive nature of lead in drinking water is not one community. And I think that's the, perhaps, most surprising nature of this crisis in lead in drinking water -- is that this is not just an urban problem, or not just a problem in one county. This is everywhere. This is rural, this is suburban, this is an urban crisis in the state.

And to be clear, testing for lead in our drinking water should not be the -- it should be the first step, but it should not be the only step. And obviously, the much tougher question this Committee is wrestling with is, how do you actually solve the problem; how do you deal with

remediation? We've already heard testimony this morning about the solution in Camden. The solution in Camden is the *Poland Springs solution*, which is, essentially, shut down the drinking water fountains and give kids Poland Springs. And that cannot be the long-term solution that we're dealing with, because we need -- we know there's a problem, from the testing that's already occurred.

But as we've heard from previous testimony, there needs to be more extensive testing for lead dust and lead paint in our schools. And clearly, we need to have all school districts comply with testing. So we heard, from the Department of Education, school districts have known this is out there; obviously, sometimes some of us can be procrastinators. This is not an issue to procrastinate on.

So I wanted to touch on a couple of items, and to refer to legislation that's currently on the Governor's desk -- and that's S-1830 and A-3411, which Assemblywoman Muoio is a co-sponsor of. And this legislation passed the Assembly unanimously in late December, and it passed the Senate nearly unanimously.

And this gets at part of the crisis we've heard again and again -- that there are no safe levels of lead in our drinking water. And this is clearly true. And I want to, kind of, dig into this, because this gets at why we shouldn't be dismissing this as someone else's problem; or that, as we hear, sometimes, from folks in more -- not from official medical organizations, but sometimes from doctors -- that a low level of lead actually isn't something to be worried about. This legislation -- which is following up on the codified Department of Health regulations, which went into effect a month ago -- last December -- are to ensure that our standards

of lead are linked to the CDC; and specifically, to codify the reductions to 5 micrograms per deciliter. I would argue that the American Academy of Pediatrics is saying that the 5 micrograms per deciliter is actually too high. And there's not some magic level -- 4.9 -- where the impacts go away.

And so I want to, kind of, touch on that in my testimony, because I think this is the part that really, you know, is the part I want to drill home here.

If you look at page 3 of the testimony, at Figure 1, it has the full range of impacts from lead. Obviously, the most extreme is death, at more than 150 micrograms per deciliter. The vast majority of, obviously, light contamination is around the 10 micrograms and below level. And we have had, kind of, an active debate on, "Well, what is the safe level of lead?" And just to cite the EPA on this, "In children, low levels of lead have been linked to damage to the central and peripheral nervous system, learning disabilities, shortness of stature, impaired hearing, and impaired formation and function of blood cells."

We heard earlier from Dan Kennedy, from DEP, on the question of, how do we figure out where the lead is coming from? And certainly, lead is lead. But I do want to cite a very, I think, not surprising study, but one that kind of illustrates that you can link lead contamination in drinking water to lead contamination in children's blood. And that comes from a study from the CDC in Washington, where the role of lead service lines and water contamination was strong enough, the CDC was able to correlate their locations with elevated blood levels in Washington.

And, you know, I want to also quote the American Academy of Pediatrics, because they've concluded that extensive and compelling

evidence now indicates that lead-associated cognitive deficits and behavior problems can occur at a lead-level concentration below 5 micrograms per cubic deciliter. If you refer to Figure 2, you'll see that this is not just, kind of, peripheral impacts; this is direct IQ loss. And this gets to the point that Assemblywoman Muoio was bringing up -- and obviously, the Education Law Center, and David was referring to as well -- is what are the educational impacts of lead in our drinking water? And I think one of the most, kind of, important, you know, case studies this Committee should be looking at -- partially is case studies where cities have gotten it right. And we just need to look across the Hudson, at New York City, and the work they've done in remediation.

But we also should look at Rhode Island, because Rhode Island -- they've had a similar kind of industrial past as New Jersey. They have had historically high levels of lead contamination. But Rhode Island took action, and they've seen educational improvements in communities that previously had high levels of lead contamination. And that's something that I think this Committee should also be looking at.

And this graph, I think, really drives this home; and these are national numbers. But at 5 micrograms per deciliter, you have an average IQ loss of 6 points, which is massive; and that includes 3 million IQ points lost.

But it's not as if it goes away and when get lower. So more than 2 micrograms per deciliter, you're talking about 1.5; you go below 2, you're talking about 1. And even close to 1, you have IQ loss.

And so I think this kind of drives home the point that this isn't rhetoric -- that lead in our drinking water impacts children's development.

This is science. And the legislation that is on the Governor's desk was passed on December 19. We obviously urge the Governor to support that legislation, because that will -- not to even codify the current standard, but to follow CDC recommendations. And obviously, we're hopeful the CDC responds to the recommendations from the American Academy of Pediatrics.

I just wanted to wrap up just by discussing some of our recommendations. Some of them, obviously, are already in legislation. And I guess I want to make a point on filters, because this is something that you brought up, Assemblyman McKeon. You know, filters for lead in our drinking water in schools -- that can work; but it's a stop-gap. Because obviously, as we know -- and from our experience in Newark -- the strategy of just flushing lead -- depending on the janitorial staff to flush those faucets every 2 minutes, first thing in the morning, every day -- does not work. And filters, obviously, don't need a focus every single day of the year; but filters need to be replaced as well. And so we should not, kind of, kid ourselves and say that filters are going to solve this. At the end of the day, it's about removing lead service lines; it's about ensuring that we have the strongest scientific standard on lead contamination; and working to ensure that we're providing the necessary funding.

So clearly, this isn't going to happen overnight. And our hope is, obviously, that this Legislature, and this Governor, and the next Governor can tackle this issue with the need that it requires.

Thank you.

SENATOR GREENSTEIN: Thank you.

ASSEMBLYMAN McKEON: You always are incredibly prepared, thoughtful, and informational. And thank you for the depth of your knowledge; and it's very helpful that we have your written testimony as well.

Any questions of Doug?

SENATOR GREENSTEIN: No. But as you say, it was so complete; -- no questions. (laughter)

MR. O'MALLEY: Thank you.

SENATOR GREENSTEIN: Thank you.

ASSEMBLYMAN McKEON: The last two guys won't be able to shut up. (laughter)

But there is a gentleman before; is Mr. Furrey here?

MICHAEL J. FURREY: (off mike) Yes.

ASSEMBLYMAN McKEON: Yes; Mike Furrey is the Chair of the New Jersey section of the American Water Works Association, a nonprofit, scientific ed association founded to improve water quality and supply. That's a great mission statement. Members include most of the state's public investor-owned water utilities, engineers, and environmental professionals.

MR. FURREY: Good morning.

ASSEMBLYMAN McKEON: Welcome, sir.

MR. FURREY: Thanks for having me again.

My name is Mike Furrey; I am the current Chair of the American Water Works Association. We have a membership of about of 1,300 people in the State of New Jersey. We're made up of engineers,

licensed operators, consultants, water purveyors, public water systems, private water systems.

I wanted to-- I presented some written testimony that you have a copy of. I wanted to just go into some of the details of what the water treatment business is all about. I know there are a lot of questions about water treatment and what they do. Most of the large water treatment systems -- if they have to treat for lead and copper. They have the option -- there are two basic options that they have in order to treat the water. They can adjust the pH, and add chemicals to adjust the pH; or they can add what they call *corrosion inhibitors*.

Large water treatment systems, usually centrally, add these chemicals at their treatment facilities. They have large distribution systems; it's very difficult to get those chemicals out into the extremities of the systems. That's why you'll notice at the end of the systems -- like schools, hospitals that are at the end of the distribution system -- they may suffer some high lead levels.

So most large water systems are in compliance with the Lead and Copper Rule. But it is a difficult process that they have to undertake to get that treatment to work effectively.

On the-- There are lot of smaller systems -- and we started to talk about that -- the state has a lot of smaller systems. A lot of small water systems have compliance issues; they have lead issues. And one of the difficulties that these small water systems have is they are usually managed and operated by an operator, and they don't have the technical resources and/or the money to address these complicated issues.

So a lot of small water systems in the State of New Jersey do have these lead and copper problems. And one of the things that we want to encourage is to--

ASSEMBLYMAN McKEON: And you guys are looking to buy them all--

MR. FURREY: Well, yes; that's--

ASSEMBLYMAN McKEON: --what's the number?

MR. FURREY: The number-- You were talking about before, that is about the 300 to 500 range. There are a lot of small-- You go out into the small, like, rural areas where they will have small community water systems, they have strip malls, schools, hospitals; they could be on their well. These are considered *small water systems*.

And there are a lot of them in the state. There is-- You know, the cities have large water systems that serve those populations. But there are a lot of areas in the state where they have smaller-type water systems, where they have less funding, they have less technical resources. So those are the difficult ones to address.

So I encourage -- you know, when we talk about funding -- is to continue that funding outreach to these small systems, and the technical resources to do that.

One of the questions -- and this question has come up a lot about lead service line replacement. One of the big issues in this industry is lead service line replacement. If you do partial lead service line replacement-- And there are issues, and we've talked about this -- is the responsibility of who owns the lead service line. It's up to the curb stop, and then the residential people -- they own that part of that lead service

line. That's a very complicated issue, and there's been a lot of research done -- that partial lead service replacement can make lead issues even worse.

So one of the-- The AWWA, national and the section, strongly encourages -- if you're going to do lead service line replacement, it's going to be full lead service line replacement. So just keep that in mind -- that partial lead service line replacement can actually exacerbate the problem and make the lead problem worse.

So we were also encouraged to hear -- and we fully support -- some of the funding opportunities that are being made available throughout the State. This is brand new; we just learned about this. I think it will be a very effective way to deal with the funding that's required to do lead service line replacement.

The one thing you need to keep in mind -- lead service line replacement can solve lead problems, but lead does come from a lot of different areas inside the buildings. You talked about lead filters; they are very effective for removing lead if they're maintained properly. But it is not -- it's not going to be the 100 percent cure. You have to realize that; it is possible -- you could remove lead service lines, and inside buildings still have lead issues.

So this is-- Lead is a very difficult chemical to treat in the water business. I could tell you that, you know, the business is making considerable effort to look into the problem. The AWWA has formed a task force; and this is ahead of the EPA regulations that are pending. And we've put together a white -- we're putting together a white paper, and we're

going to issue that to the DEP and the EPA as some of our -- some of the things that we see with the shortcomings of the regulation.

The regulation was -- it was in 1991; it's been 26 years since that Lead and Copper Rule has been updated. One of the things is, I think we would encourage you, as lawmakers, to encourage the EPA and the DEP to look at the rule and regulation and try to update that regulation to make it make more sense.

There's a lot of different ways to evaluate treatment. There are innovative ways, like installing pipe loop systems in sampling stations -- in the distribution system. I know there was one question: How do you evaluate what's going into a building? Well, those are some of the ways that you could evaluate what kind of lead levels are going into the building.

So the AWWA has been working very closely with a lot of different organizations in the state. I just came from a seminar with the Planners Association. We've been working closely with the Department of Education on doing training for schools, in getting them the information that they need in order to tackle these very complicated issues.

The last thing I wanted to say is that, from our perspective, we believe this is a collaborative effort if we're going to solve this problem. It's going to be with the industry, with the EPA, the DEP, health groups, other organizations, private water companies, and public water companies. It's a very complicated issue. But I think if we put these very strong minds together, we could solve this problem. It's a very complicated problem, but I think we can solve it.

And the last thing I'd like to say -- and this is the position of the AWWA, nationally, which we have about 50,000 people nationally; and

on the local, on the State level -- we believe that there is no safe level of lead in drinking water. And we're making every effort to minimize those exposures.

So I just wanted to open up to anybody who had any questions for us. I presented the written testimony. If you have any questions for me, I could take some questions.

ASSEMBLYMAN McKEON: We appreciate the written testimony, which we were all thumbing through, listening to you.

Assemblyman DiMaio.

ASSEMBLYMAN DiMAIO: Yes, just a real quick question.

If the water is tested as it leaves the source -- the plant, or the well where it comes from, on a regular basis -- does lead occur naturally in--

MR. FURREY: No, lead rarely occurs naturally in surface water supplies or groundwater supplies. It's a-- Most of the lead is from lead solder, brass valves inside of buildings, lead service lines; you know, mostly at the actual -- at the building. So it's rare that it actually naturally occurs.

ASSEMBLYMAN DiMAIO: But it does occur.

MR. FURREY: It can occur naturally, but it's extremely rare.

ASSEMBLYMAN DiMAIO: But it should be picked up in the tests at the plant or at the well.

MR. FURREY: Yes, the testing-- The testing that water systems are required to do -- they're required to take a number of samples out at peoples' homes -- high-risk homes; what they call *Tier 1*, high-risk homes. They take a first-draw sample, and that evaluates what lead levels are out in the system.

They are also required -- and Dan Kennedy mentioned -- they do an extensive amount of water quality testing out in the system to evaluate if the corrosion control is effective. So they are required to test not only leaving the treatment plant, but right out -- out at various points in the distribution system.

ASSEMBLYMAN DiMAIO: And you just prompted another question.

The corrosion control additives, or the phosphate -- the pH boosting apparently are failing in areas like Newark, where we're seeing these higher levels of lead. It's not lining the pipes properly, or there's not enough flow to get the chemical there. What's going on?

MR. FURREY: Well, interestingly enough, Newark actually receives two different water supplies. They have one supply from the Pequannock Water Treatment Plant. They add in a chemical called *sodium silicates*, which is a corrosion inhibitor. The Wanaque Reservoir, the North Jersey -- where I worked for 12 years -- they add a phosphate; they have a booster station, where they add the corrosion control out in the system. So Newark, essentially, has two water supplies; they have two surface water supplies. So they mix those, they mix--

ASSEMBLYMAN DiMAIO: How does the interaction of those chemicals affect anything?

MR. FURREY: There, sometimes, can be some negative interactions between the two chemicals. That's one of the problems that-- What you saw in Flint, when they changed water supplies, they failed to add the corrosion inhibitor. And the water was very aggressive and corrosive. And if you don't -- if you don't add that inhibitor-- The way the

inhibitor works, it takes the lead and it sticks it to the pipe; that's what it tries to do. So it reacts with the lead and makes it stick to the pipe so it doesn't leech out into the water. If you don't have the right amount of chemicals, then you can leech lead into the water.

ASSEMBLYMAN DiMAIO: So if we do have this conflict with the chemicals -- two different supplies to the same system -- and we're aware of this, and we may know it causes problems -- we're not doing anything to address the two supply sources to put them on the same page, so to speak?

MR. FURREY: Yes, there are two different water supplies. Newark is unique in that way; they have two different supplies coming from two different surface water plants, with two different treatments.

ASSEMBLYMAN DiMAIO: Would it help if they were told that they should be using the same chemical, or is there something different about the water supplies and they need a different chemical?

MR. FURREY: In some case, yes, it would be helpful. There are, sometimes, even with phosphate chemicals -- there are different types of brands of phosphates that could interact. There are thousands of different types of chemicals that you can use. It does make a lot of sense if you used the same chemical; that would actually help.

ASSEMBLYMAN DiMAIO: Okay. I am happy that you were able to put that on the record.

Thank you.

ASSEMBLYMAN McKEON: Senator.

SENATOR GREENSTEIN: Yes.

Hi. You know, we're going to have a big challenge in this Committee, shortly, to come up with some attempt at solutions to these problems. We're going to have to assess how much money is available, and what the problems really are.

So standing back from what you know, that we've been discussing, and what you know about the topic, how do we begin to prioritize? I mean, do we have anywhere near the amount of money-- And I'm not just talking about the lead issue; that's a major part. But all the other fixes that we have to do. Let's just start with the lead part. Do we have anywhere near the amount of money to fix what we need to fix, because -- especially when it comes to kids, you can't partially fix it. You have to fix it.

MR. FURREY: Right, you have to--

SENATOR GREENSTEIN: Do we have enough money; how do we prioritize; and then, going beyond lead, what are some of your thoughts on how we prioritize what has to be done?

MR. FURREY: Well, you do have to identify what's the best approach. In my opinion, centralized water treatment -- effective centralized water treatment, and good pragmatic regulations that enable water systems to do that, is the most cost-effective way to reduce lead. Plumbing replacement -- removing plumbing from buildings is extremely expensive.

SENATOR GREENSTEIN: Talk just a little but more about the centralized water treatment. How would that--

MR. FURREY: Well, the centralized treatment-- If the water treatment plants -- if they are required to treat, they have to add the right

amount of chemicals -- the additives, essentially -- at the facility; and then monitor throughout the system. Currently, the way the current regulation is written, there's not a lot of monitoring that's required out in the system. We do know that the EPA has been proposing more testing and more of an emphasis on water quality testing out in the system to evaluate whether the treatment is effective or not.

Dan Kennedy mentioned before -- it's very difficult for water systems to get inside people's homes to take water samples. So they're going to have to think of different ways to help evaluate how effective that is.

But from a cost standpoint, treating effectively, and good regulations that help monitor that treatment, is the most cost-effective way of treating for lead.

SENATOR GREENSTEIN: Thank you.

ASSEMBLYMAN McKEON: Thank you very much.

Panel, any other questions? (no response)

Seeing none, again, thank you for your thoughtful testimony.

MR. FURREY: Thank you very much.

ASSEMBLYMAN McKEON: We may get you back again.

MR. FURREY: Thank you very much.

ASSEMBLYMAN McKEON: The man, the myth, the legend, who needs no introduction -- Jeff Tittel of the Sierra Club. (laughter)

J E F F T I T T E L: Jeff Tittel, New Jersey Sierra Club.

I'll try to be brief, but there are a lot of issues here that we've worked on.

I'll just say that there's just one word: money; that's the word. Everything else -- you know, we know what the problem is; we've been seeing these problems for 30 years-plus. And we have some decent bills in legislation. But it all comes down to that one thing -- where can we, and how can we get the money?

Also one other thing that we need to do to protect our water supply when it comes to dealing with lead-- And I'm sorry Assemblyman DiMaio left -- because it's not that they get it from two sources. They have two separate systems in Newark. The Pequannock system serves the Central, West, and the South Wards of Newark; and the Wanaque system is the East and North Wards. And so, two separate plumbing systems -- that's why. And so they don't intermix that water at all.

ASSEMBLYMAN McKEON: You'll get a chance to talk to him. I think he just stepped away for a moment.

MR. TITTEL: Okay. I just wanted to-- As somebody who spent most of my life by the Wanaque Reservoir, and lived in Newark, I know it's--

Anyway, I want to just get to a couple of major points.

So the first point is testing. So we need to come up with a series of standards for testing, and make it much broader. Because you have to identify the problem where it is before you can try to treat it. Part of the problem with some of the bills that are here -- it could also be State mandate-State pay; and that's a problem. And that's why -- again, getting back to the problem of money and looking for ways to find it; whether there's a -- you add a fee on. You know, we use lead paint for -- we pay fees for lead; and we may need to figure out a fee, or a small fee, to help deal

with the testing for lead in schools. I just wanted to flag that, because I know there are some decent bills that Assemblywoman Muoio is working on, and Herb Conaway, and others.

The second major piece is mitigation. Because as you identify the problem, you need to, at least, have temporary remedies. We were the organization that broke the story about what was happening in some of the schools in Newark, where they found filters that had been there for more than 10 years; some from 2004, that were still in place, and hadn't been changed. So filtering helps; but you need to make sure you have oversight and funding, because filters also cost money.

Bringing in bottled water is a temporary fix, at best; and we have systems, like in Camden, where they're doing it.

I wanted to talk about the buffering and the anti-corrosives. That's a key part of one of the problems we have in three of the major water systems in New Jersey, which are the Newark system -- the Pequannock system, not the Wanaque system; the Trenton system; and the Passaic Valley system. It's that they have open-air reservoirs for finished water; which means that sunlight hits that water after it's gone through the treatment plant. You cannot add orthophosphates then, because you get algae blooms and other things that would affect the water quality and public health. And therefore, unless those three systems go to closed tanks, or do an after-treatment after it leaves the reservoir -- putting in chlorine or something else -- you cannot do the buffer.

So here in Trenton -- where we're drinking the water -- because of the open-air reservoir that should have been closed 20 years ago, off of 31-- They're not putting the buffers in. And that's a serious problem.

You can add buffering agents going into buildings and large facilities, college campuses, things that are cost-effective; it's not for the regular homes. So the only thing you can do for a regular home is also to have-- And I would say a house-wide filter; because just putting the Britta filter -- which probably won't do that much -- but (indiscernible) filter at the end, you're still breathing in lead when you shower, and it is still getting into your pores, and you're drinking. And all of a sudden, you grab a cup of water out of the bathroom -- you're also drinking lead. And so that's part of the problem.

The other issue that I wanted to touch with on the area of the corrosives, are also the salts. So one of the major reasons that Flint had its problem was that the water was fairly dirty and had high levels of corrosives and road salts. That's a serious problem. And so one of the ways to also help reduce lead is to reduce the pollution going into the water systems in the first place. So trying to get towns, like we used to do in Ringwood -- we used potassium chloride for road salts, and we used grit instead of just -- we didn't use salt, we used grit mixed with potassium chloride as a way to knock down the salt levels going into the reservoir. But we need to start looking at things like that as well.

Also, as we spread development into the hinterlands, the levels go up. So the more development we have and more roads we build, the more we put corrosives in our waterways. That causes the lead to leech out. So it's a direct -- when we get rid of stream buffers and we allow for development in environmentally sensitive areas, especially where there's -- in water supply areas, that will add to the road salts, which will add to the lead problems in our schools.

So as we used to say in Ringwood, everything we do in town affected people in Newark and other towns.

We also need to look at standards and-- When I was in college, I did research on how lead is also a mutagen; it also causes mutations. It's not just -- that's why it's a neurotoxin, because it can actually change your body and cause mutations inside as well.

But the point that I'm making is, we need to review and overhaul our standards. They go back decades; 30 years or more. There's been a lot of science since then. You know, when we have a better standard for the Private Well Testing Act than we do for our public water supply systems and our schools, something's wrong with that. And we need to really reduce it to the lowest common denominator we can get at that's financially and scientifically achievable. And there are ways of doing it -- with systems with reverse osmosis and other things -- to get the lead out. But we also need to make sure we keep the lead in -- that it doesn't get in the water in the first place.

You know, we also -- and I listened to DEP; one of the reasons that they don't know about what systems have what problems where, is we haven't updated the Water Supply Master Plan in 20 years. It's just an example.

And so I wanted to throw out a few ideas -- and I will talk more at other times -- to try to find funding mechanisms.

Now, we had a bill on plastic bags to help deal with lead in schools. That would be one way to get money for testing and funding for it.

One idea that we thought about for a long time is to try to find a way to -- as we replace these pipes in the cities, use the savings in water as

a way to help pay for those pipes. Because if you look at the City of Newark, and Trenton, and others, 30 percent of the water leaks out. Well, that water can be captured and sold somewhere else. That may be a way of helping paying it off. Because otherwise, we're sitting here and looking at an \$8 billion problem to fix the pipes; another \$8 billion problem in the state to update water treatment. And that doesn't even deal with what's in the building. We see \$5 million condos being built in Jersey City; and yet the pipes in the streets are still 100 years old, or older. And maybe we should think about, as a way to help -- and this is something that goes back a long time ago -- start thinking about going back to the concept of having-- When we do new development or redevelopment in these older urban areas, to actually have some kind of impact fee so we can start having some of the money to fix those pipes. That would be another way to look at it. Because if you're Charlie Kushner, and you're building that big tower -- a 90-story tower -- and you have bad water coming in, maybe it would be in your best interest to help fix those pipes in the street and put some money towards it.

We have to be innovative to try to come up with the money. Because otherwise, all we're doing is having another series of hearings, like we had years ago; passed some good bills, but no money to implement it. And the problem is going to keep getting worse.

And so we really need to spend time on the last part, which is the funding source. Because unfortunately, we need action. And we have a lot of things we need to do, but we cannot allow this to continue. It has gone on far too long.

And my last point is that by fixing and dealing with the lead standards in our drinking water, it would also help clean up the

contaminated sites, because they're related. Another important issue -- because, again, it's the cumulative impact of lead. No matter where you are in New Jersey -- but it's more acute in urban areas -- you're getting lead in the air coming from incinerators and other sources; you're getting lead in the paint in your home, or in the schools in the water, or on the playgrounds in the sawdust. So it's a cumulative problem; it's not just a -- it's not just one thing. It's not just the paint, it's-- You have to look at the broad picture.

And in lead -- especially in drinking water, with children, because they drink more water per pound than we do -- it has a much bigger impact. And so it really -- we really need to spend the time and look at coming up with the funding sources to deal with this problem. Because if we don't, it's not going to go away and it's going to get worse.

And my last point I just want to end with: We're very troubled with the incoming Administration -- with the freezes in contracts and funding for the EPA. And money for water systems is being frozen right now; money for testing, money for the State of New Jersey. And so we also need to make sure that our Legislature -- our Federal legislators -- are pushing to make sure that we get funding.

And we need, also, at the Federal level, a big infrastructure package to deal with this water issue. We can't do it alone; we can make steps and we have to make those steps. But we also need to look long-term, and for long-term funding for major infrastructure improvements.

ASSEMBLYMAN McKEON: Jeff, excellent testimony.

Just a quick question, if you know.

MR. TITTEL: Sure.

ASSEMBLYMAN McKEON: We just -- out of the Assembly, anyway -- or Committee -- passed a bill requiring that the tire manufacturers and repairers no longer use lead weights that end up -- I think the estimate was 12 million pounds of lead gets into the water system that way.

MR. TITTEL: Yes.

ASSEMBLYMAN McKEON: Are there other sources that are non-pipe related -- of lead into our water supply, paint and other issues aside?

MR. TITTEL: Yes, I mean, there are-- Electronic waste, which we're also tackling, which has a lot of lead. A lot of it is also air deposition. You know, you'd be surprised how much lead comes out of a power plant, even a relatively clean one. So it actually can fall.

ASSEMBLYMAN McKEON: You mean like an acid rain kind of thing?

MR. TITTEL: Yes; basically, what goes up, comes down. The biggest source of lead in the Ironbound section of Newark is the Covanta incinerator, as an example. And that gets into the soil, and plants, and other things.

Also, we do have, in some parts of New Jersey, some naturally occurring lead. In the Highlands, there are some steams of lead; there's actually -- and other parts. And so again, acidification of rain would add to it.

Another serious problem we have -- that I didn't really want to get into because it gets a little more complicated -- is that in Central and South Jersey we have acid soils. And so where we have well water in areas

where we have the acid soils, that water can also leech lead out of pipes. And that's one of the problems in South Jersey and some of the areas -- especially the older towns near the Delaware River, where they have high levels of lead being found. It's because the well water that they're getting, in certain areas, has high levels of -- the pH is very acidic; and that's another-- And so again, you have to have buffering agents and other things.

ASSEMBLYMAN McKEON: Thank you.

MR. TITTEL: It's a statewide problem; and, you know, it's really -- we really need to do something about it because we're talking about our most precious resource, children.

ASSEMBLYMAN McKEON: Thank you, Jeff.

Any questions? (no response)

Seeing none--

SENATOR GREENSTEIN: Thank you.

ASSEMBLYMAN McKEON: Thank you.

I'll let you give Dave--

SENATOR GREENSTEIN: Last but not least, Dave Pringle, Clean Water Action's Chief Strategist, Media Spokesperson, and Lobbyist.

DAVID PRINGLE: (off mike) And bottle washer. (laughter)

SENATOR GREENSTEIN: Dave, did you write this?

MR. PRINGLE: Ah, you've been reading something from our website, I think.

ASSEMBLYMAN McKEON: Hey, Dave, I'll give you credit; because when you testified at our first hearing, you started to talk about lead, and you said, "That's a whole other area."

MR. PRINGLE: Correct.

ASSEMBLYMAN McKEON: By the way, we're still waiting for your written report from two months ago.

MR. PRINGLE: I was going to acknowledge that. .

ASSEMBLYMAN McKEON: But beyond that -- that, I think, gave the Co-Chair and I the idea that we should do this separate and apart.

MR. PRINGLE: And I appreciate your recognition in still wanting to read that (indiscernible) report. (laughter)

Thank you, again.

For those of you who don't know me, my name is David Pringle. I'm the New Jersey Campaign Director for Clean Water Action, which is a national environmental group, working here in New Jersey and elsewhere.

I will summarize my comments and try not to repeat; and just mostly reflect on a couple of the different things I heard today, and a couple of points I don't think that have been driven home.

I certainly want to associate myself and my organization with the comments of Doug, and Jeff, and the other non-government experts and advocates here today. And I have to say, (indiscernible) feel squeamish, but I think I found it very noting that-- I was very troubled by the lack of urgency stated today, and in the performance since this problem was exposed over the last year -- or brought to a new head, because it has always been around -- the lack of urgency by the Christie Administration, and the Department of Education, and DEP today.

Lead is a killer; and it brings all kinds of societal problems together, from education, to crime, to poverty. It's not reversible; someone was asking, "Can you fix it?" You can stop making it worse, but it's not--

You can beat cancer; you can't beat losing IQ because of lead poisoning. You can just stop making it worse; stop having that IQ drop further.

And I did write this before Jeff said it, but it bears repeating: It does all come down to money. And that is especially difficult, given the overall fiscal climate; and especially challenging, given the priorities of the Christie Administration. And just when we were seeing the light of day from that, we have, you know, trouble a-brewing on the national front.

And this isn't partisan; this is about science. And when you're deleting science from government websites, and you're prohibiting scientists from submitting work for peer review by prestigious scientific journals; you doubt the scientific fact that climate change is happening, and humans are a significant source of the problem, and calling it, really, a *Chinese hoax*, or really a hoax brought by the scientists of this country because they want funding -- we're going to have a tough time in the next couple of years. And this is very related, because it does come to money. The Feds are going to have to play an absolutely critical role in this.

Even if we didn't have the money and the political problems, the science here is really tough. The biggest problem is, probably -- for lead in drinking water, it's almost certainly the lead service pipes. But, as you've heard, there is a lot of lead in your house before -- once you get in between the lead solder and the brass alloys, they contain lead in all-- And it's very difficult to troubleshoot where those problems lie.

Further, there are so many factors involved with how much of that water will -- how much lead will leech out into that water, depending on the temperature, the pH, the concentration of the lead in the metal, how

long the water is in contact with that metal, the other minerals in the water -- all play significant roles in how much lead actually gets into the water.

Somebody asked earlier -- I think it might have been you, Assemblyman DiMaio -- about paint on -- whether you can cover-- Actually no; I think it was you, Senator Greenstein -- whether you can cover up lead in paint.

SENATOR GREENSTEIN: Oh, yes.

MR. PRINGLE: And you can; it's certainly better than having it exposed. But ultimately, much like the drinking water solutions, the only ultimate, effective, long-term solution is to remove it; and that's--

Short-term, that's the most expensive; long-term, it's the cheapest. But a lot of these benefits we're going to be achieving 20, 30, 40 years from now, when children are more or less productive members of society, based on how much they were poisoned when they were 5, and 6, and 7. And it's unfortunate, but it's reality, that it's a lot easier to plan for today and tomorrow, than it is to plan for 20, 30, 40 years from now. Even if everybody agrees it's cheaper in the long-run, it's still more expensive in the short-run.

And when it comes to drinking water, none of the short-term solutions are good. Filters aren't good; they have to be replaced, and people forget, and that costs money. Clean Water Action's environmental justice organizer, Kim Gaddy, who is now on the Newark School Board, after being off of it for almost two decades -- she was on it in the 1990s, and she was the one who identified lead as a problem in Newark's schools back then. And they came up with a solution; it was filters. And then, within a couple

years, everybody forgot about it. And so we've had a couple decades more of lead exposure because of that.

Bottled water is expensive, just from a strict expense sense; forget the impacts of the cost in the long-run in terms of the full life cycle there. Running water -- it's great to say to run your faucets in the morning, and after the weekend, and in September after school starts. But that's flawed.

The chemical treatment is certainly better than nothing. But as we see, that's flawed; and finding alternative sources of water is certainly flawed.

And so we really do need to replace -- identify and replace where the lead is coming from.

My organization is part of a new national entity that was just founded in January; and we're on the steering committee of it. It's called the *Lead Service Line Replacement Coalition*, www.lslr-collaborative.org. It is a coalition of environmentalists, the State Government associations, public health agencies, the water utilities, and labor. And its goal is to get lead service lines replaced on a voluntary basis. Not a big surprise that the water utilities are not going to be supportive of mandatory replacement right away; but you take what you can get. And absent those mandates -- and we're still pushing for those mandates -- this is a good first step. It's an aggressive effort to educate and mobilize folks because the finances and the legalities are so difficult. But again, it's only a step in the right direction.

There have been a bunch of bills introduced; we really appreciate the leadership of Assemblywoman Muoio and others on them. We do need to do the testing; we do need to do the remediation. But

again, it comes down to money. And that's going to require teamwork. There's no one solution; there's no magic bullet. It's going to be a combination of things. And I'm going to -- utilities are going to have to foot the bill some, and that's going to mean the ratepayer is going to have to foot the bill, shareholders are going to have to foot the bill. And you can put mandates on them to help make that happen.

Unfortunately, school boards are going to have to deal with it. There are a lot of old and current water funds available; the Environmental Infrastructure Trust is doing some good work. It's a chronic flaw in our Federal policies when it comes to water funding -- that the entities that need the help the most are the least able to afford it. And so when the vast majority of money is loans, it doesn't matter if it's a zero interest loan. If you don't have the money to pay it back, you don't have the money to pay it back.

So I'm glad to hear about EIT pushing the Feds to allow for more grants and loans, and we need to go -- we really need to push harder.

At the State level, it's ultimately going to come down to that favorite thing that nobody wants to deal with, which is new sources of revenue. There's no right or wrong source of revenue, from a substantive standpoint; it's whatever is politically viable, or a combination of things. You know, we've thrown out a bunch of different ideas over time--

ASSEMBLYMAN McKEON: Assemblyman DiMaio is calling for a water tax. (laughter)

MR. PRINGLE: Oh, good. No, it's a water *fee*.

You know, I've had, as you know, Assemblyman McKeon, as being a champion of it -- we've been working 25 years for a water fee to

fund any number of worthy things, from Open Space preservation to improving our water infrastructure.

ASSEMBLYMAN McKEON: *Ix-nay* on the water fee.

MR. PRINGLE: All right; whatever. (laughter)

Ultimately, you know, *ix-nay* on the gas tax too; but that happened, for better or worse. And at some point, lots of folks privately say they're all for it; but you know, unless everybody jumps off the cliff together, it doesn't happen.

But there are a bunch of other options that are out there. And I know some are more or less popular with one party or another. But the inheritance tax could be changed back -- and not have it be totally eliminated, but slowed down. I think folks who are inheriting \$2 million could afford a tax. Certainly the way the -- what the inheritance tax was three months ago, certainly wasn't the fairest. But there are lots of options between total elimination and status quo, as it existed in 2016.

The millionaire's tax -- there are corporate tax breaks up the wazoo. One of my favorites was -- I'm trying to remember the utility -- but there was a utility that was given State money to move from Atlantic City to Hammonton. I'm not really sure how that-- And it was a utility; there was zero chance -- zero; they don't even debate it -- zero chance they were going to be moving out of state. So no jobs were saved, no jobs were created. Taxpayer money was wasted, and it was millions of dollars. And there are many examples we all know about.

So there are lots of ways to find the money, if there's a political will to do so. And if we don't have the political will to not poison our

children -- and all the crime, and education, and poverty issues that that entails -- I don't know what we're all doing here.

So I know you want to make this happen, and I thank you for your leadership. And, hopefully, this will be part of the spark to get the collective political will to really do what needs to get done to solve this problem; or at least make it a heck of a lot less bad than it is today.

Thank you.

ASSEMBLYMAN McKEON: Thank you for your very thoughtful testimony.

SENATOR GREENSTEIN: Thank you.

ASSEMBLYMAN McKEON: Any questions from the panel?
(no response)

Seeing none, we advertised this meeting as being open to any public comment. Are there any members of the public here who would like to be heard?

Yes, the gentleman; sir.

We ask you to give us your name and address, for the record. And if you're affiliated with a group, let us know that as well.

H A R V E Y K L E I N: Yes, my name is-- Is this on? (referring to PA microphone)

ASSEMBLYMAN McKEON: Yes.

MR. KLEIN: My name is Harvey Klein; my home address is 18 Hawthorne Court, Morristown, New Jersey.

ASSEMBLYMAN McKEON: Welcome, Mr. Klein.

MR. KLEIN: Thank you.

I am the Laboratory Director of Garden State Laboratories, which is a laboratory certified by the New Jersey Department of Environmental Protection for a wide variety of water tests, including lead in both drinking water and wastewater. We are one of the labs that actually perform these analyses.

I'd like to start by just reading two brief items from some articles. One is an article which I and Jim Benson, who is the Health Officer of Morris Township, wrote. It's called "Lead in Drinking Water: Investigation of a Corrosive Water Supply." I'm just going to read a couple of sentences.

"We also recommend that priority be given to evaluating corrosive water in urban areas in light of higher background lead exposure for urban children. We further recommend that immediate study be directed towards the development of sampling methods that can be used specifically for corrosive waters, and that will represent actual consumer exposure to the metals that are by-products of corrosion."

I will point out that this article was written before the Federal Lead and Copper Rule went into effect in 1991. The fact is, that we wrote this 1982. There is nothing new about any of this chemistry.

I will also reference an article -- and much of the discussion today has been noted about the corrosiveness of water. The scientific analysis we perform in the laboratory is called the *Langelier Index*, also known as the *saturation index*. This is based upon work performed by Professor Langelier; and his main -- or his initial article, his important article, was written in 1936. And I will just quote, again, two sentences.

“It is believed that water superintendents in cities where the saturation index of the water falls well below minus-1.0 should investigate its possibilities. They will find, in general, that the annual savings to house owners in cost of repairs and replacements to hot water systems will greatly exceed the cost of treatment.” Again, this was written in 1936.

There’s nothing new about the chemistry. Many of the questions you’ve been asking people today, I get asked every month, every week -- sometimes multiple times a day, especially when there’s something in the news.

I just want to comment, briefly, on a couple of the items; and that is, one, is the use of filters, and I know this was asked several times. NSF -- NSF used to be called the National Sanitation Foundation; they now use the name NSF International -- certifies filters for the removal of lead in drinking water. NSF-certified filters work. They have worked exceedingly well in Flint, Michigan; my understanding, based upon the EPA’s information -- and again we have not done any laboratory work in Michigan -- but from what the EPA has put out, over 120,000 NSF-certified filters have been used--

ASSEMBLYMAN McKEON: How much do they cost?

MR. KLEIN: I’m sorry?

ASSEMBLYMAN McKEON: How much-- I’m assuming that a single filter--

MR. KLEIN: NSF-- Well, okay. First I will point out that Garden State Laboratories does not sell any water treatment equipment.

ASSEMBLYMAN McKEON: We’re all good.

MR. KLEIN: Well, that's an important consideration, actually, because -- because we do not sell any water treatment equipment, frankly, I don't care what people use, from a monetary standpoint. From a working standpoint, NSF filters do work. They do remove lead; and the water coming out of the filters is -- and I will use the term, I hesitate -- *acceptable*.

ASSEMBLYMAN McKEON: I appreciate you have no economic interest. If you don't know what they cost, you don't have to tell me.

MR. KLEIN: Oh, I'm sorry. The cost; yes. The cost for the homeowner filters are between \$50 and \$100; and they have to -- as has been mentioned many times, and it is absolutely correct, the key for the proper use of filters is the replacement of the cartridges on a periodic basis. And most homeowner filters would require cartridge replacements every three months or so.

ASSEMBLYMAN McKEON: And are they placed on every tap; is that how they work?

MR. KLEIN: Well, that is, of course, up to the homeowner. And as has been discussed today, most water systems themselves are not contaminated with lead. The water in the water mains do not contain lead. However, the lead comes from the lead pipes, from the fixtures, from the brass fittings, from the leaded solder. And the best example I can give is, several months ago -- I believe it was in the spring -- a homeowner, who happened to live in Ocean County, submitted three samples to our laboratory from his own home. One of the samples had a lead result of less than 1 part per billion; one faucet had a lead result of 3 parts per billion;

and one faucet had a lead result of 35; 35 is a significant exceedance above the 15 parts per billion action level.

The one comment that I found interesting from that homeowner, was that was the new faucet he just put in two weeks before he did the testing.

In theory, the EPA has lowered the amount of lead in brass fittings, from 8 percent to 2 percent, in 2015. So his new faucet shouldn't have any lead. It just shows that the difference between theory and reality is very real.

ASSEMBLYMAN McKEON: I just-- I hope you don't mind.

MR. KLEIN: No.

ASSEMBLYMAN McKEON: And I'm not-- God knows I know you're here because you're so knowledgeable and care. So I'm not asking for that reason.

MR. KLEIN: No.

ASSEMBLYMAN McKEON: But if I took a sample from my faucet and sent it to your lab, how much would that cost me, for you to be able to give--

MR. KLEIN: Well, amazingly, cost was an important issue discussed earlier today. That is also a question I get asked almost every day. (laughter) And it also on our website. And the cost we charge is really dependent upon the client; and that is the turnaround time that the client desires. Our routine turnaround time is 10 business days; the cost for a lead analysis is \$50.

ASSEMBLYMAN McKEON: Okay.

MR. KLEIN: We have had requests for an extended turnaround time; in other words, people want to spend less money. For a 20 business day turnaround time, we charge \$25. We also, on occasion, get requests for rush work, where someone wants the results as fast as possible. And our 5-day turnaround time is \$100. So as you can see, it's not up to me, it's up to you. Do you want a spend \$25, \$50, or \$100?

ASSEMBLYMAN McKEON: Okay.

MR. KLEIN: And I get that question almost every day.

I also want to point out a couple of other quick issues that have been mentioned several times. But it is critical to recognize that the water in the mains is virtually free from lead. There are approximately 3,800 public water systems in the State of New Jersey; there are approximately 800 community water systems which are doing testing. And as you've heard, from many people, the water in the main is not the problem; it's the lines coming in -- if they're a lead service line, if there's leaded solder used, if there are brass fittings used.

One thing I have not heard mentioned today, but is, sometimes, quite critical -- and that's if the pipes are properly electrically grounded. If you have a pipe which is not properly electrically grounded, that can increase corrosion. And corrosion is, obviously, the big concern.

I've heard mentioned the issue of -- just before -- chloride and salts in water; and that also is a critical issue. And as we've heard so many times today, different water systems have different Langelier indexes; in other words, different corrosion saturation indexes. Flint, Michigan, was also mentioned; and in fact, to be even more specific, in Flint, as we all know, they switched -- they stopped using orthophosphate, which was a

major technical error -- it increased the problem. But I heard chloride mentioned -- oh, he's not there -- mentioned before. In fact, the water department in Flint Michigan -- when they started using-- The Flint River had problems with turbidity, so they added a chemical -- a well-known chemical used to coagulate and flocculate the water to remove turbidity from the water. The chemical is known as *ferric chloride*, a very well-known chemical used in the water field. So in fact, the water department increased their own chloride results.

Everyone, I'm sure, here, is very familiar with Professor Marc Edwards, who led a lot of the work done in Flint. It so happens that Professor Edwards is an expert on the chloride to sulfate ratio; and the increasing of that ratio increases corrosion. In fact, Professor Edwards has written several articles, and, I believe, a book -- for the American Water Works Association -- on that very specific issue.

It's just to show you that New Jersey is not -- or Flint is not unique. Here in New Jersey we had an incident, this year, where another small public water system-- The chemistry was similar; the reasons were different, in that a water system was injecting orthophosphate into their system to treat the water to prevent lead. Their injector broke, so for a period of time orthophosphate was not injected into the water and, needless to say, the lead results skyrocketed.

Once the orthophosphate was repaired, I was asked a question. And, as a scientist, I can rarely give an answer that is 100 percent accurate. This was one of the few times that I could. I was asked, "Well, Harvey, now that we're putting the orthophosphate back in, how long will it take until the problem goes away?" And I said, "Well, it might be a few days;

more likely, several weeks. It could even take several months.” It took from, I believe, the end of February until May. So as you can see, my answer was 100 percent accurate. It took several months.

I will also point out something which Senator Greenstein has noted -- and that is the source of lead from other areas. We’re talking about dust, we’re talking about paint. Paint is not new; leaded paint has been known for many decades as a source of contamination in children, especially young children. Quite frankly, I would not be that concerned about leaded paint in a high school; the high school students aren’t going to eat the leaded paint; the children will.

However, I will point out that, within the last year, local New Jersey health departments have submitted to Garden State Labs food samples for lead analysis. That is somewhat unusual; we do not get a lot of food samples analyzed for lead. We do a lot of bacteriological testing in food. In both cases, lead results were found at greater than 3,000 parts per million. Now remember, in drinking water, we’re talking about 15 parts--

ASSEMBLYMAN McKEON: Can you explain the food thing? Do you mean a piece of meat; or, like, meaning it’s airborne that gets into it?

MR. KLEIN: No; it was a powder. They were both imported foods. One was an Indian powder, and one was another food from India.

It turns out, in both cases, these foods were illegally contaminated with the chemical called *lead chromate* for coloring. It’s a known problem; you can do your own Google research.

But again, recognizing the numbers we're talking about: 3,000 parts per million -- that's milligrams per kilogram -- as opposed to 15 parts per billion. We're talking literally hundreds of thousands of times.

Obviously, lead is out there; it is a naturally occurring element. You don't like to think of children eating dirt or dust; it does occur. But to know that in some-- And by the way, a factory was actually shut down last June, I believe, in India for intentionally, criminally, adding the lead chromate to food. So it is out there.

Water, as we all know though, is so ubiquitous; it's everywhere. We all drink the water; we're all exposed to it. Every water system is different -- even within a single water system, as we have heard. There are multiple cases of the chemistry changing; the Langelier index changing; different chemicals being used to modify the corrosivity -- the orthophosphate being a very commonly used one.

This is why I go back to-- In the perfect world, and you go to a school -- whether it's an elementary school or high school -- in the perfect world, none of those pipes, none of the faucets, none of the fixtures would have brass with 8 percent lead, or leaded solder, or leaded pipes. But we live in an imperfect world. And then it gets back to something that, quite frankly, you folks are far more interested in than I am, and that's the money.

And the reality is, as we've heard many times today, if it costs between \$3 million and \$5 million to go into a school and replace all the pipes, and all the faucets, and all the fixtures; and it costs \$10,000 to install water filters -- and that's not an exaggeration. If you need 100 water filters, and each filter is \$100, that's \$10,000.

ASSEMBLYMAN McKEON: We got the math. We're not scientists, but we got there. (laughter)

MR. KLEIN: That's just to make sure we all went to school. That's what we learned in school -- the math. And the math is pretty accurate. And let's say you have to replace them every year. You're looking at \$20,000, you're looking at \$50,000, one way; versus millions, other ways. In the perfect world, we would replace all the pipes. You folks have to make that decision.

Again, I'll be glad to answer any technical or scientific questions; that's what I get asked all the time.

ASSEMBLYMAN McKEON: I appreciate -- and others may have questions -- but I think you're awesome, and thank you for giving your time today to be here. And you're obviously a great resource.

And if we have your contact information, we may ask some of those questions, as we go forward.

SENATOR GREENSTEIN: I just -- I have one question.

The number that you estimated -- \$3 million to \$5 million -- to change over the pipes in one school.

MR. KLEIN: Yes.

SENATOR GREENSTEIN: How do you get that number?

MR. KLEIN: I've looked at the Newark schools. My laboratory happens to be in Hillside; it so happens my mother was a public school teacher in the Newark School District back in the 1940s. And I attended several of the meetings they were having, just to learn more about what's going on. Our laboratory has done water testing for the Newark

School District and other school districts. And the reality is, if you test water enough, you probably will find lead in some samples. That's a reality.

SENATOR GREENSTEIN: Thank you.

ASSEMBLYMAN McKEON: Anybody else have any questions? (no response)

Thank you again.

SENATOR GREENSTEIN: Thank you.

ASSEMBLYMAN McKEON: It really is meaningful that you came here and gave your time to us.

MR. KLEIN: Thank you.

ASSEMBLYMAN McKEON: Thank you.

Any members have comments, before I ask the Senator if she does? And I have one or two final ones.

Assemblyman? Thank you for your time and service. I know you give a lot of service as, I think, a Commissioner on one of those small, local water purveyors. So we appreciate that.

Liz, you're good?

Thank you; you're swapping in, and thank you for your five hours today. (laughter)

And Senator.

SENATOR GREENSTEIN: I just want to thank everybody. We have so much to mull over here; and, you know, it's been educational.

Thanks.

ASSEMBLYMAN McKEON: And last comment: This is 15 hours of hearings, thus far, spread over three different sessions; more than 25 witnesses. We do have a lot to, now, review and synthesize. We will

probably have one more hearing, I would suspect, subject to the Co-Chair and our planning; and then, ultimately, end up-- Our goal is to publish a report -- as the enabling legislation requires, you know -- sometime this spring.

So again, thank you all; and again, to all staff here, you're great.

SENATOR GREENSTEIN: Thank you.

(MEETING CONCLUDED)